The London Borough of Hillingdon

Progress Report, 2017

London Borough of Hillingdon
Air Quality Annual Status Report for 2016

Date of publication: 21/4/17

This report provides a detailed overview of air quality in the London Borough of Hillingdon during 2016. It has been produced to meet the requirements of the London Local Air Quality Management statutory process[1].

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[1] LLAQM Policy and Technical Guidance 2016 (LLAQM.TG(16)). https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/working-boroughs

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Abbreviations

AQ	Air quality
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQSPG	Air Quality Supplementary Planning Guidance
ATC	Automatic Traffic Counter
ATM	Air Traffic Movement
BAA	(Formerly) British Airports Authority
CAB	Cleaner Air Borough
CHP	Combined Heat and Power
CO	Carbon monoxide
COMEAP	Committee on the Medical Effects of Air Pollutants
EV	Electric Vehicle
FDMS	Filter Dynamics Measurement System
FIDAS	Fine Dust Analysis System
FORS	Fleet Operator Recognition System
GLA	Greater London Authority
GSK	GlaxoSmithKline
HAL	Heathrow Airport Limited
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LEZ	Low Emission Zone
LLAQM	London Local Air Quality Management
MAQF	Mayor's Air Quality Fund
NO_2	Nitrogen dioxide
NOx	Oxides of nitrogen (including NO and NO_2)
NPPF	National Planning Policy Framework
NRMM	Non-Road Mobile Machinery
O_3	Ozone
PM_1	Particulate matter less than 1 micron in diameter
PM_{10}	Particulate matter less than 10 microns in diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
QA/QC	Quality Assurance / Quality Control
SO_2	Sulphur dioxide
TEOM	Tapered Element Oscillating Microbalance (for PM measurement)
TfL	Transport for London
ULEZ	Ultra Low Emission Zone
VCM	Volatile Correction Model
WHO	World Health Organization

Executive Summary

This report provides information on:

- Air quality in the London Borough of Hillingdon in 2016
- Progress with the Borough's Air Quality Action Plan (AQAP)
- Planning applications with relevance to air quality in the Borough
- Challenges facing the Borough for complying with statutory concentration limits.

There remains continued exceedance of the limit for the annual average concentration of NO_2 at certain locations. Data from the automatic monitoring sites and the diffusion tube network had indicated some improvement in 2015 (as reported last year), though this was within the variability that can be explained by differences in meteorological conditions, and concentrations at many sites in 2016 were higher than the year before. It is noted that caution must be taken when using 2016 diffusion tube data given problems encountered in data collection (these are now remedied). Users of the information provided here are recommended to use 2015 data instead to support air quality assessments for planning applications, and to consult with the Borough Council for selection of sites and background locations.

The hourly limit for NO_2 is complied with, and no exceedance of air quality limits for other pollutants has been identified.

The Borough has continued to make good progress on implementation of its air quality action plan. Most measures are now either completed, or are defined as 'ongoing' – this relating to actions that are now a part of the Council's way of working and need to be acted on continuously. An example concerns school travel plans: all schools in the Borough have these plans, but continued action is needed to make sure that they are acted on and improved where possible.

It had been intended to undertake a substantial revision of the AQAP during 2016. However, continued uncertainty around future developments at Heathrow Airport, and the burden of work that this has imposed on Council staff prevented this being completed. The definition of Air Quality Focus Areas across London with the GLA was completed in December 2016. Work on the revision of Hillingdon's action plan to take account of these Focus Areas is now underway and will be completed this year.

A number of planning applications have been submitted that have implications for air quality in the Borough. Appropriate conditions have been recommended for consideration in the planning process, with special stringency applied to application sites within or in the vicinity of Focus Areas.

The Council continues to face a number of challenges for air quality improvement, for example in relation to the major road network and Heathrow Airport, has lobbied hard to gain recognition of these challenges and is collaborating as necessary with the relevant organisations.

1 Introduction

1.1 Description of Local Authority Area

Hillingdon is, geographically, the second largest local authority in London and has approximately 250,000 residents. Parts of the Borough to the north of the A40 are semi-rural, with Ruislip as the district centre. The south of the Borough is more densely populated, urban in character, and contains the metropolitan centre of Uxbridge and the towns of Hayes and West Drayton. It also contains numerous important transport links. As well as being home to Heathrow Airport the Borough is crossed by the M4 and the A40 and bordered to the west by the M25 and to the east by the A312, attracting traffic into the Borough and encouraging traffic to pass through it. These roads generate a significant air pollution burden for the Borough.

1.2 Purpose of this report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

The London Local Air Quality Management system was launched in April 2016. This report has therefore been generated to feed into the broader process of air quality improvement for the London area.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM and relevant to this report are set out in the Air Quality (England) Regulations 2000 (SI 928) (Table A) and subsequent amendments. This table shows the objectives in units of micrograms per cubic metre µg/m^3 (milligrams per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table A. Summary of National Air Quality Standards and Objectives relevant to this progress report.

Pollutant	Objective (UK)	Averaging Period	Date[1]
Nitrogen dioxide - NO_2	200 μg m^{-3} not to be exceeded more than 18 times a year	1-hour mean	31 Dec 2005
	40 μg m^{-3}	Annual mean	31 Dec 2005
Particles - PM_{10}	50 μg m^{-3} not to be exceeded more than 35 times a year	24-hour mean	31 Dec 2004
	40 μg m^{-3}	Annual mean	31 Dec 2004
Particles - $PM_{2.5}$	25 μg m^{-3}	Annual mean	2020
	Target of 15% reduction in concentration at urban background locations	3 year mean	Between 2010 and 2020
Sulphur dioxide (SO_2)	266 μg m^{-3} not to be exceeded more than 35 times a year	15 minute mean	31 Dec 2005
	350 μg m^{-3} not to be exceeded more than 24 times a year	1 hour mean	31 Dec 2004
	125 μg m^{-3} mot to be exceeded more than 3 times a year	24 hour mean	31 Dec 2004

Note: 1) Date by which to be achieved by, and maintained thereafter

1.4 Hillingdon's Air Quality Management Area (AQMA)

An AQMA was declared in Hillingdon against exceedance of objectives for NO_2 in 2003. Air quality problems in the Borough continue to be most severe around Heathrow Airport and the major road network that goes through the Borough, reflecting the largest sources of nitrogen oxide (NO_x) emissions within the AQMA which covers the southern half of the Borough (Figure 1). The possible inclusion of areas in the north of the Borough has been kept under review.

Figure 1. Hillingdon's AQMA.

An Action Plan, showing how Hillingdon Borough Council intended to tackle these problems, was issued in 2004. This contains a series of 8 packages, each containing a number of measures, that address emissions from traffic, Heathrow Airport, industry, existing housing and new developments.

1.5 Focus Areas

1.5.1 Focus Areas agreed with the GLA

In association with the GLA a number of Focus Areas have been identified across Hillingdon, highlighting specific locations where air quality improvements are key, and a coordinated approach is necessary, involving not only Hillingdon but also regional bodies such as GLA and Highways England. These are shown in Figure 2.

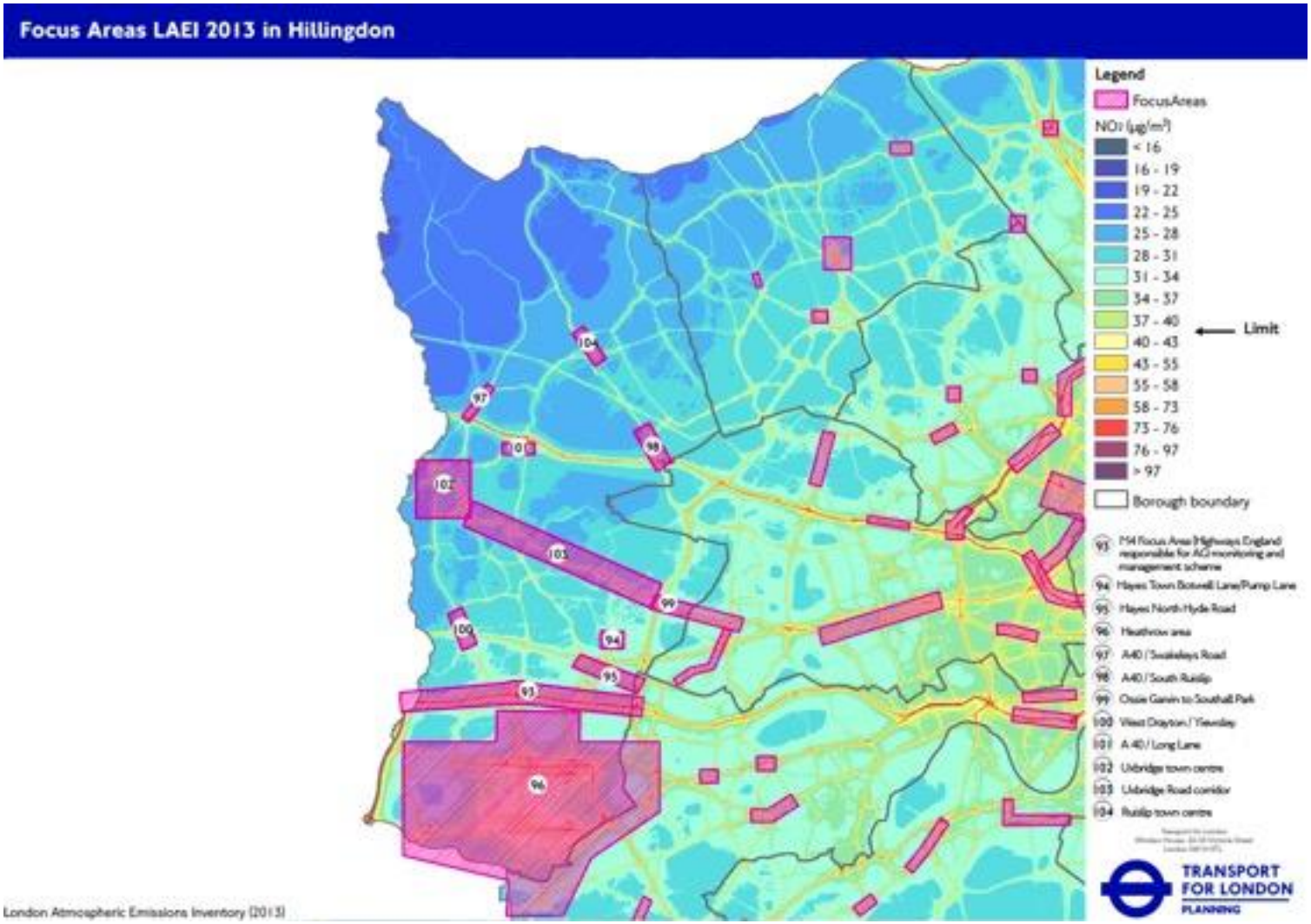

Figure 2. Focus Areas defined for Hillingdon's AQAP by GLA in consultation with Hillingdon

It is specifically noted by GLA that Focus Area 93, covering the M4 throughout its passage through Hillingdon is '*subject to a full environmental management scheme by Highways England*'. In part, this links to Highways England's development of the M4 through the Borough and out to Reading as a 'Smart Motorway' [2], which entails closer management of speed, hard shoulder running under congested conditions and other active controls on traffic using electronic signalling. This has the potential to affect air quality in Hillingdon by:

- Increasing the number of vehicles on the M4;
- Moving some vehicles onto the hard shoulder where they will be closer to those living, working, going to school, etc. near the M4; and
- Reducing congestion.

A letter from Highways England to Ian Thynne (Principal Environmental Officer in Hillingdon) states the following of direct relevance to this progress report and future plans to be developed by the Borough. Text from Highways England is shown in italics, with further comments made here in plain font.

M4 Smart Motorway: Air Quality

2. Highways England … is currently drafting its air quality monitoring strategy for the scheme, as clearly set out in DCO[3] requirement 26(1)(a) and (b), included below for completeness:

"26(1)(a) be prepared in consultation with the relevant local authorities ("the air quality authorities") for those Air Quality Management Areas in which the authorised development is located where both a change in air quality in excess of 0.4µg/m³ is predicted in the environmental statement, and where annual mean concentrations are above the national air quality objective value;

(b) set out the location and specification for operation and data provision for any monitors to be installed in line with guidance on air quality monitoring issued by the Department for Environment, Food and Rural Affairs from time to time (but the duplication of existing monitoring is not required where its data is available);" (bold added by Highways England)

The draft monitoring strategy is being formulated to address the 17 properties that are above the annual mean NO_2 concentration 40µg/m³ and have a change of more than 0.4µg/m³ with the operation of the M4 junctions 3 to 12 smart motorway scheme as set out in the Environmental Statement. None of the 17 properties are within LB Hillingdon's administrative boundary and consequently there is no need to undertake air quality monitoring within your Borough.

M4 Smart Motorway: Heathrow Expansion

4. The Government have announced the preferred location for the additional airport capacity as being a third runway for Heathrow. Heathrow is serviced by junctions 4 and 4B of this Scheme and completion of the M4 Scheme is included within the base case of the Heathrow Surface Access Plan. The Airports Commission Final Report states that:

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[2] http://www.highways.gov.uk/smart-motorways-programme/

[3] Development Consent Order issued by the Secretary of State for Transport. https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010019/TR010019-003522-Development%20Consent%20Order%20as%20made%20by%20the%20Secretary%20of%20State%20for%20Transport.pdf. The relevant text is on page 45 of the Order.

"On the strategic road network, a number of links near to the airport, particularly those sections of the M4 in the closest proximity, are expected to require widening to cope with increased demand resulting from expansion, although demand management measures, such as congestion charging, could be used as an alternative to this."
Such additional improvements around Heathrow from M4 junction 4 to junction 3 would necessarily fall to Heathrow to assess and deliver, and include in their subsequent DCO application. As such the M4 junctions 3 to 12 smart motorway will not be undertaking any further work to review the scheme in light of the Heathrow Expansion decision.

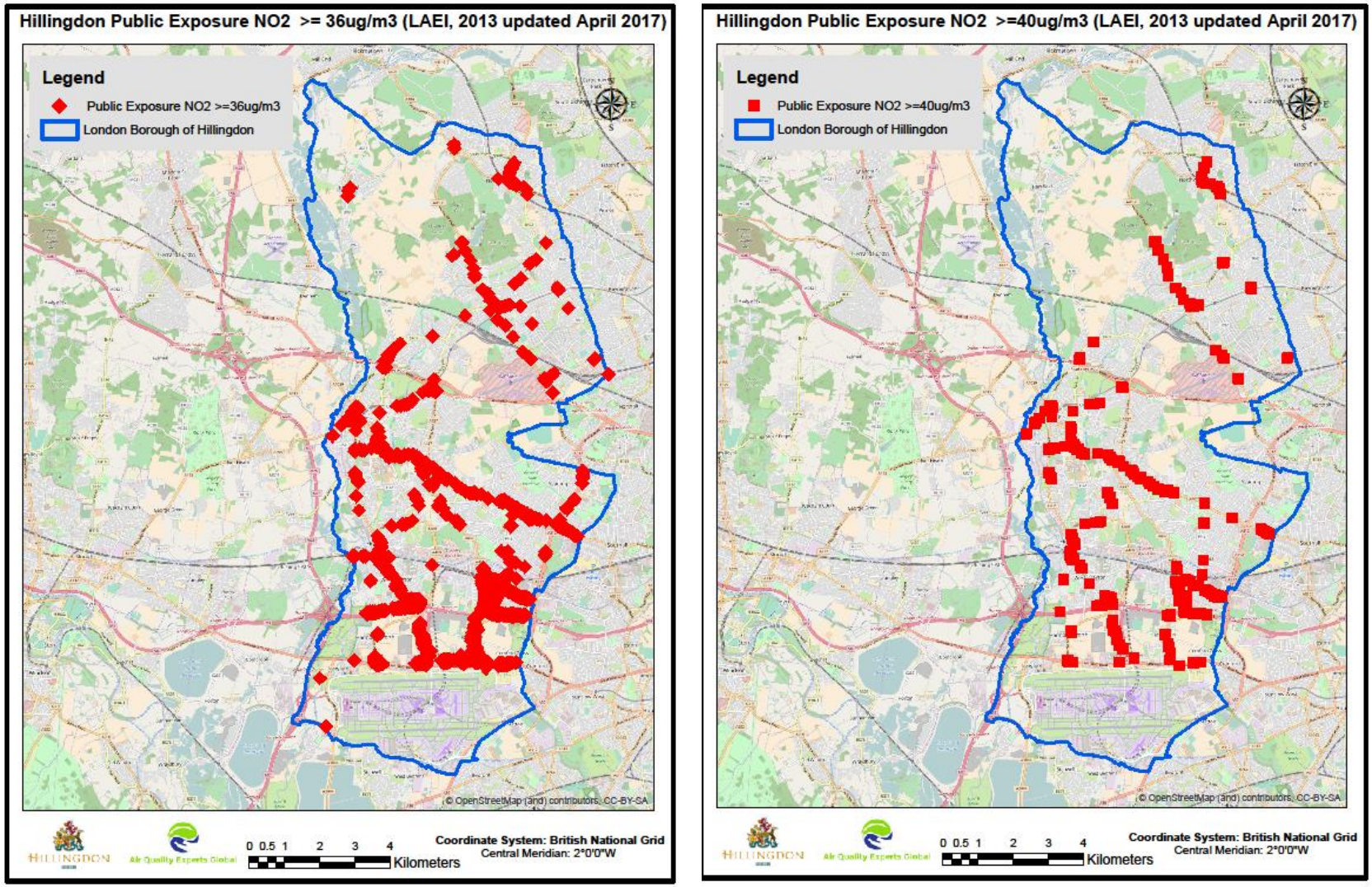
Ongoing Problems with the M4: Air Quality
5. The attainment and reporting of the EU Limit Values is managed by Defra on behalf of the UK Government, including the relevant sections of road and monitoring locations reported to the European Commission.
Highways England does not have a specific air quality action plan for the M4 that we can provide to the LB Hillingdon. However, Highways England does take the matter of poor air quality very seriously and is currently undertaking extensive research into a range of potential air quality mitigation options. At this time we are still evaluating their effectiveness and quantifying any improvements in air quality as well as assessing whether they are viable. ake [sic] *to the levels of annual mean* NO_2*.*

It is disappointing that so long (well over a decade) into the process of Local Air Quality Management that Highways England is still carrying out research. It should also be noted that Hillingdon considers the air quality data used in the environmental statement to be extraordinarily optimistic (as the Planning Inquiry was notified). However, it is appreciated that this research is at least now happening and that Highways England is now taking the issue more seriously than in the past. The focus of the Smart Motorway DCO only on properties that are in excess of the limit value and where conditions would worsen by more than 0.4µg/m³ largely ignores the legislation where it is stated that air quality should be improved where limits are exceeded and conditions should not be worsened where there is no exceedance. It also fails to recognise that the limit values do not represent no-effect thresholds, and that these concentrations are still damaging to health.

1.5.2 Focus Areas identified by the Borough Council

The Focus Areas shown in Figure 2 do not fully capture the diversity of sites where public exposure has been identified above the limit values. These are highlighted in Figure 3. For the future development of the revised AQAP which will identify measures to be taken locally as well as by the regional authorities, the Borough Council has developed a more detailed map of Focus Areas (Figure 4).

Figure 3. Identification of locations where public exposure exceeds 36µg/m^3 and 40µg/m^3 NO_2 annual mean



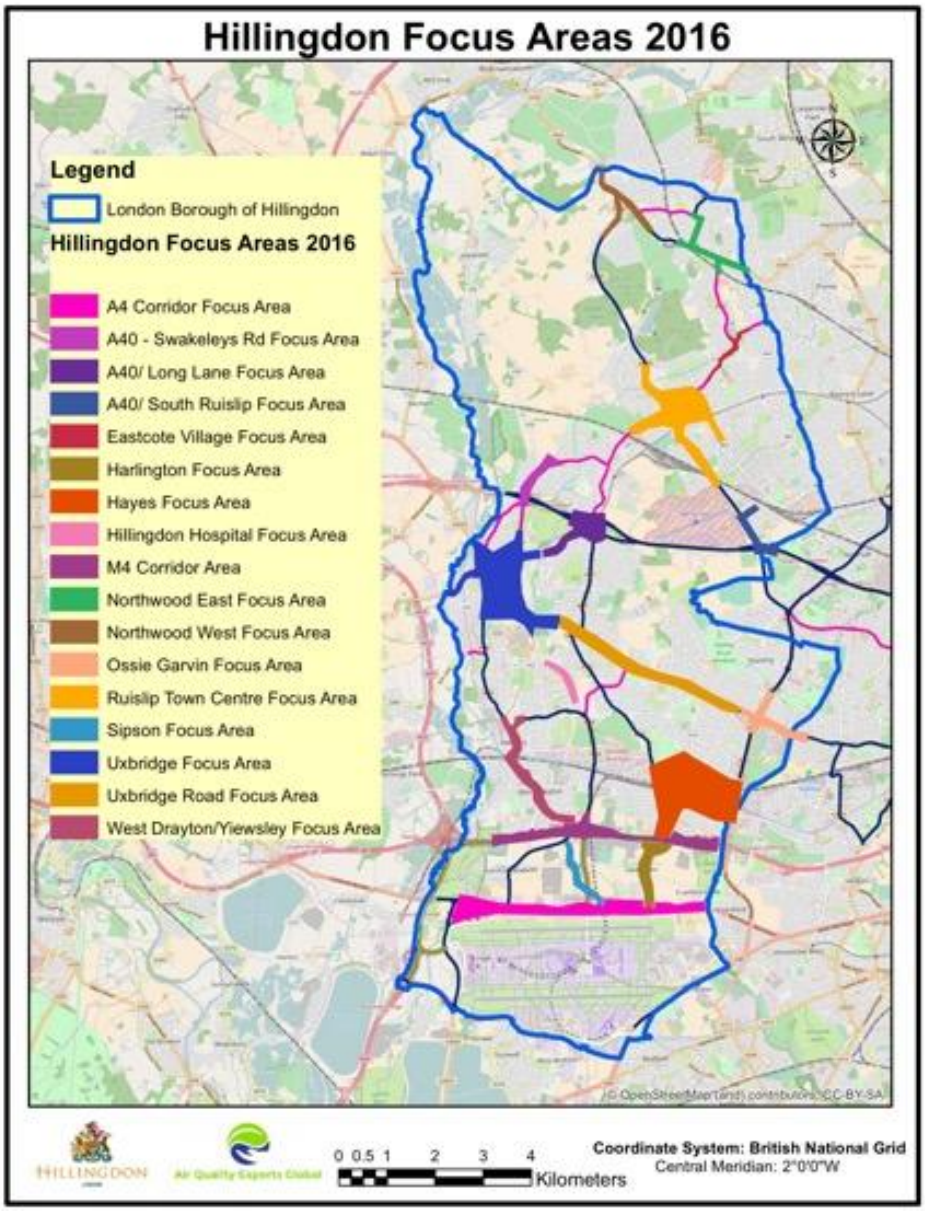


Figure 4. Detailed map of Focus Areas including those identified and agreed with the GLA and additional Focus Areas requiring more local actions.

2 Air quality monitoring in Hillingdon

2.1 Automatic monitoring sites

There were 11 operational automatic continuous monitoring sites in the London Borough of Hillingdon in 2016 (Figure 5). Hillingdon 1 (South Ruislip), Hillingdon 3 (Oxford Avenue), London Sipson, London Harmondsworth, Hillingdon Hayes and London Harmondsworth Osiris (HIL4) are all part of the Borough monitoring network. London Hillingdon is part of the Defra - owned Automatic Urban and Rural Network (AURN). London Heathrow (LHR2), Heathrow Oaks Road, Heathrow Green Gates and London Harlington are all part of the Heathrow Airport monitoring network. Details of these sites are shown in Table B.

The method used by the Osiris monitoring system used for HIL4 has only recently been validated for the UK monitoring network. Results for the site will be provided in future annual reports.

2.2 Non-automatic monitoring sites

Passive diffusion tube monitoring of NO_2 is carried out at a number of locations across the Borough, supplementing the information generated by the more expensive automatic network. During 2016 NO_2 monitoring was undertaken using diffusion tubes at 39 sites. One of these sites (that has triplicate tubes) is co-located with the London Hillingdon automatic monitoring site. Locations of the passive monitoring sites in 2016 are shown in Figure 6, with additional details in Table C.

A bias adjustment factor of 1.03 reported in the latest version (March 2017) of the national database of co-location studies[4] conducted for tubes prepared (50% TEA in acetone) and analyzed by Gradko has been used to adjust the diffusion tube results.

Full details of the diffusion tube QA/QC including justification for the choice of bias adjustment factors are presented in Appendix A. Monthly NO_2 diffusion tube data are also provided in Appendix B.

[4] http://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html

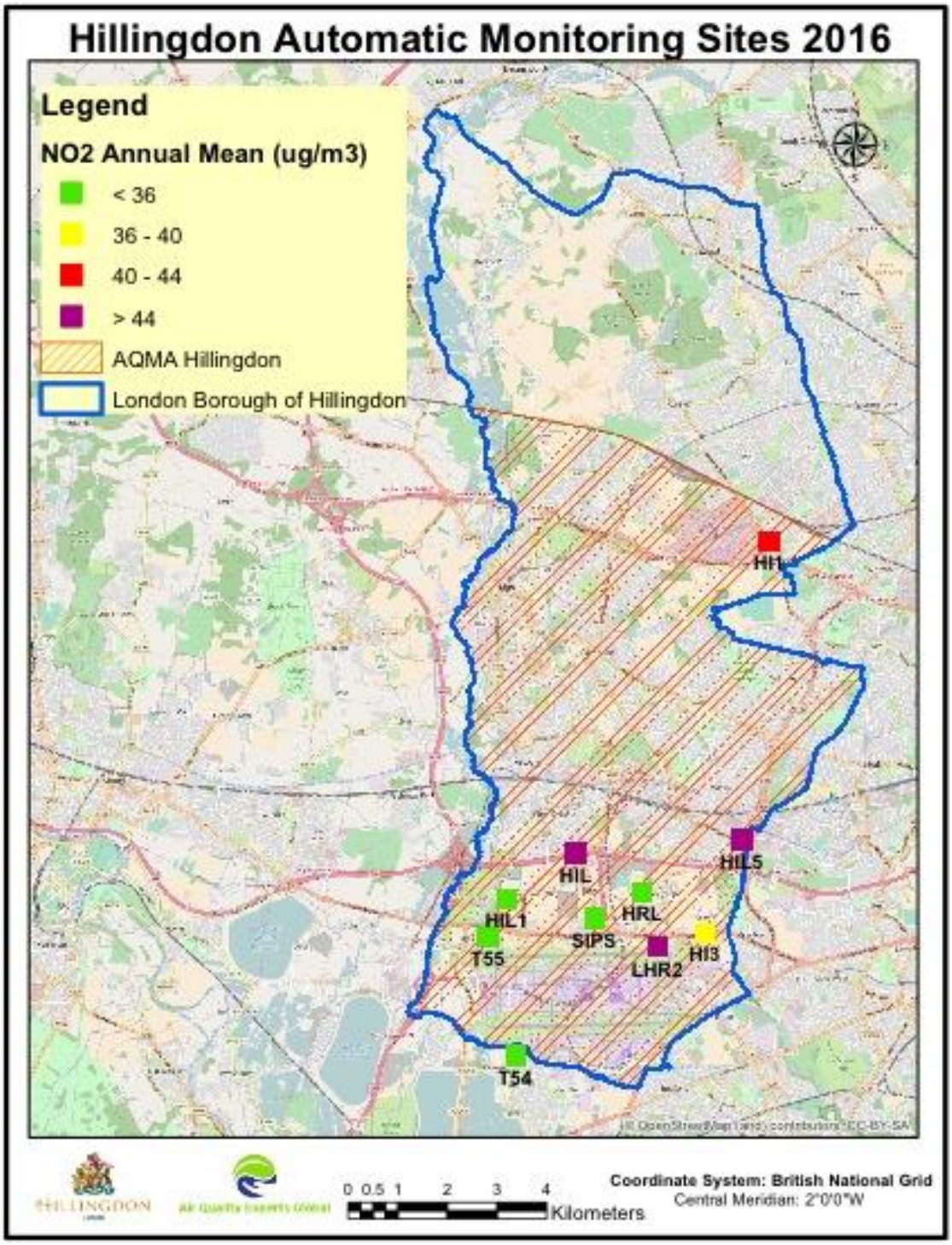


Figure 5. Location of the automatic monitoring sites in Hillingdon, 2016.

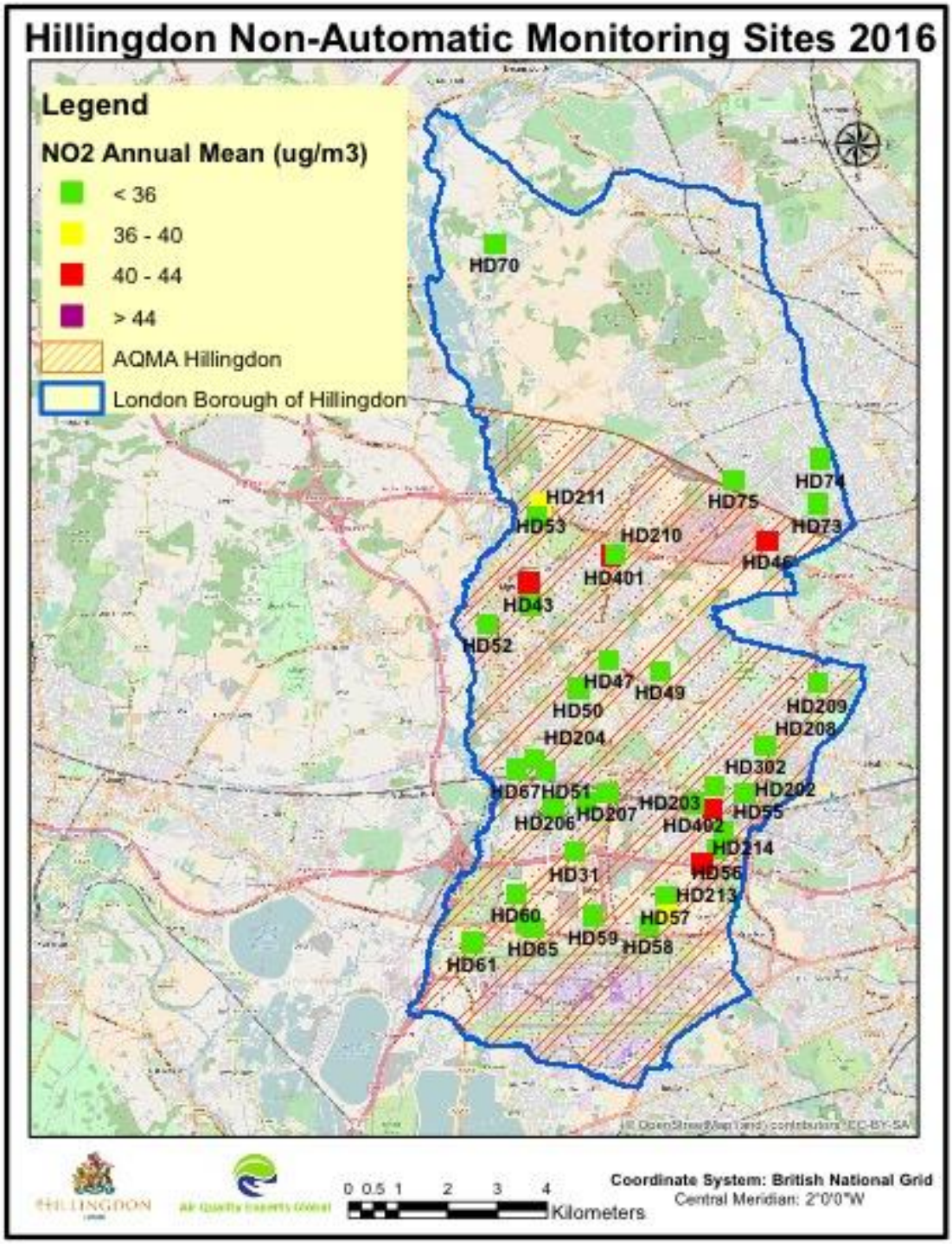


Figure 6. Location of the non-automatic monitoring sites in Hillingdon, 2016.

Table B. Details of Automatic Monitoring Sites for 2016

Site ID	Site Name	X (m)	Y (m)	Site Type	Within AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable), (m)	Inlet height (m)	Pollutants monitored	Monitoring technique
LHR2	London Heathrow	508600	176700	Airport	Y	N/A	N/A (inside airport)	1.5	NO_2, $PM_{10,}$ $PM_{2.5}$	Chemiluminescence FIDAS
HIL	London Hillingdon	506951	178605	Urban background	Y	16m	2.5m (30m to M4)	1.5	NO_2, O_3	Chemiluminescence
HI1	Hillingdon 1 - South Ruislip	510857	184917	Roadside	Y	11m	2.5m	1.5	NO_2, PM_{10}	Chemiluminescence TEOM
HI3	Hillingdon 3 - Oxford Avenue	509557	176994	Roadside	Y	8m and 17m	33m to A4 Bath Road (2m to Oxford Avenue)	1.5	NO_2, PM_{10}	Chemiluminescence TEOM
HRL	London Harlington	508295	177800	Airport	Y	N/A	3m	1.5	CO,,NO_2, O_3, PM_{10}, $PM_{2.5}$	Chemiluminescence TEOM FDMS
SIPS	Hillingdon Sipson	507325	177282	Urban background	Y	9m	2.5m	1.5	NO_2	Chemiluminescence
HIL1	London Harmondsworth	505561	177661	Roadside	Y	20m	1m	1.5	$NO_{2,}$ PM_{10}	Chemiluminescence BAM
HIL4	London Harmondsworth Osiris	505671	177605	Urban background	Y	1m	13m	1.5	NO_2 PM_{10}, $PM_{2.5}$, PM_1	Optical
T55	Heathrow Green Gates	505207	177072	Airport	Y	32m	13m (and 62m from airport boundary)	1.5	NO_2, PM_{10}, $PM_{2.5}$	Chemiluminescence FIDAS
T54	Heathrow Oaks	505729	174496	Airport	Y	N/A	5m	1.5	NO_2, PM_{10}, $PM_{2.5}$	Chemiluminescence FIDAS
HIL5	Hillingdon Hayes	510303	178882	Roadside	Y	15m	1m	1.5	NO_2, PM_{10}	Chemiluminescence BAM

Table C. Details of Non-Automatic Monitoring Sites for 2016

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor? (Y/N)
HD31	AURN Site, Keats Way, West Drayton	506926	178614	Roadside	Y	0	30m from M4	1.5	NO_2	Y
HD43	Uxbridge Day Nursery Park Road Uxbridge (on wire Fence)	505996	184058	Roadside	Y	0	4	1.5	NO_2	N
HD46	South Ruislip Monitoring Station West End Road	510821	184923	Roadside	Y	14	2.5	1.5	NO_2	Y
HD47	Hillingdon Primary School Uxbridge Road Hillingdon (on wire fence)	507617	182506	Roadside	Y	0	5	1.5	NO_2	N
HD49	83 Hayes End Drive Hayes End Middlesex (on drain pipe)	508651	182274	Roadside	Y	7	7	1.5	NO_2	N
HD50	Hillingdon Hospital Monitoring Station Colham Road (Near John Rich House on former junction to Pield Heath Road)	506989	181920	Roadside	Y	7	2	1.5	NO_2	N
HD51	Top of Colham Avenue (4) Yiewsley (lamp post at end of road)	506335	180263	Roadside	Y	0	4	1.5	NO_2	N
HD52	Lamp post near 101 Cowley Mill Road Uxbridge	505159	183232	Roadside	Y	95	1	1.5	NO_2	N
HD53	Warren Road Ickenham Uxbridge (1st lamp post on left)	506243	185653	Roadside	Y	1	23	1.5	NO_2	N
HD55	Harold Avenue (first lamp post on left)	509918	179015	Roadside	Y	4	30	1.5	NO_2	N
HD56	15 Phelps Way Hayes (lamp post outside of)	509798	178654	Roadside	Y	7	1.5	1.5	NO_2	N
HD57	25 Cranford Lane Harlington (lamp post on the left after car park)	508758	177718	Roadside	Y	7	1	1.5	NO_2	N
HD58	Brendan Close Harlington (1st lamp post on the left)	508414	177125	Roadside	Y	0	1	1.5	NO_2	N
HD59	Bomber Close (7) Sipson (1st lamp post on left)	507296	177323	Roadside	Y	8	1	1.5	NO_2	N

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor? (Y/N)
HD60	*Harmonsworth Green Harmondsworth (lamp post outside nursery)*	*505736*	*177752*	*Roadside*	*Y*	*0*	*1*	*1.5*	*NO_2*	*N*
HD61	*Heathrow Close Longford (1st lamp post on the right)*	*504851*	*176770*	*Roadside*	*Y*	*0*	*2*	*1.5*	*NO_2*	*N*
HD65	*28 Pinglestone Close Sipson Middlsex (on drainpipe)*	*506079*	*177081*	*Roadside*	*Y*	*0*	*4*	*1.5*	*NO_2*	*N*
HD67	*31 Tavistock Road (on lamp-post outside house)*	*505731*	*180288*	*Roadside*	*Y*	*3*	*1*	*1.5*	*NO_2*	*N*
HD70	*Harefield Hospital Hill End Road (lamp-post outside entrance)*	*505299*	*190923*	*Background*	*N*	*0*	*5*	*1.5*	*NO_2*	*N*
HD73	*Queensmead School South Ruislip (lamp-post opposite Jubilee Drive) (outside AQMA)*	*511825*	*185655*	*Roadside*	*N*	*0*	*1*	*1.5*	*NO_2*	*N*
HD74	*Field End Road/Field End School S.Ruislip 3rd Lamp-post south of school entrance (outside AQMA)*	*511889*	*186563*	*Roadside*	*N*	*8*	*1*	*1.5*	*NO_2*	*N*
HD75	*Sidmouth Drive South Ruislip (2nd lamp-post from West End Road outside Nursery) (outside AQMA)*	*510125*	*186144*	*Roadside*	*N*	*4*	*2*	*1.5*	*NO_2*	*N*
HD200	*49 Zealand Avenue Lamp Post*	*505920*	*177188*	*Roadside*	*Y*	*8*	*13*	*1.5*	*NO_2*	*N*
HD202	*49 Silverdale Gardens, Hayes Lamp Post (8)*	*510361*	*179820*	*Background*	*Y*	*9*	*14*	*1.5*	*NO_2*	*N*
HD203	*Blyth Road, Hayes Lamp Post (4)*	*509683*	*179486*	*Roadside*	*Y*	*6*	*2*	*1.5*	*NO_2*	*N*
HD204	*Side of 104 Yiewsley High Street (front of 1A Fairfield Road) Lamp Post (2)*	*506108*	*180493*	*Background*	*Y*	*9*	*37*	*1.5*	*NO_2*	*N*
HD205	*1 Porters Way (corner with Kingston Lane) Lamp Post (1)*	*506503*	*179510*	*Background*	*Y*	*12*	*9*	*1.5*	*NO_2*	*N*
HD206	*5-7 Mulberry Crescent, West Drayton Lamp Post (18)*	*507141*	*179628*	*Background*	*Y*	*10*	*2*	*1.5*	*NO_2*	*N*
HD207	*35 Emden Close, West Drayton Lamp Post (14)*	*507580*	*179812*	*Background*	*Y*	*7*	*60*	*1.5*	*NO_2*	*N*

Site ID	Site Name	X (m)	Y (m)	Site Type	In AQMA?	Distance from monitoring site to relevant exposure (m)	Distance to kerb of nearest road (N/A if not applicable) (m)	Inlet height (m)	Pollutants monitored	Tube co-located with an automatic monitor? (Y/N)
HD208	*Side of 50 St. Christopher's Drive Lamp Post (13)*	*510761*	*180766*	*Background*	*Y*	*5*	*180*	*1.5*	*NO_2*	*N*
HD209	*29 Pendula Drive, Hayes Lamp Post (2)*	*511828*	*182023*	*Background*	*Y*	*10*	*79*	*1.5*	*NO_2*	*N*
HD210	*340 Long Lane, Uxbridge Lamp Post (71)*	*507649*	*184611*	*Roadside*	*Y*	*18*	*2*	*1.5*	*NO_2*	*N*
HD211	*198 Harefield Road, Uxbridge Lamp Post (2)*	*506143*	*185395*	*Background*	*Y*	*9*	*33*	*1.5*	*NO_2*	*N*
HD212	*59 Hillingdon Road, Uxbridge Lamp Post (56)*	*506035*	*183611*	*Roadside*	*Y*	*12*	*1.5*	*1.5*	*NO_2*	*N*
HD213	*10 West End Lane, Harlington Lamp Post (2)*	*508773*	*177352*	*Background*	*Y*	*11*	*33*	*1.5*	*NO_2*	*N*
HD214	*R/O 130 Cleave Avenue, Hayes Lamp Post (33)*	*509499*	*178370*	*Roadside*	*Y*	*18*	*27*	*1.5*	*NO_2*	*N*
HD302	*Botwell House RC Primary School (Side-fence)*	*509755*	*179934*	*Roadside*	*Y*	*5*	*12*	*1.5*	*NO_2*	*N*
HD401	*15 Victoria Avenue, Hillingdon Lamp Post (2)*	*507730*	*184623*	*Background*	*Y*	*5.6*	*2.7*	*1.5*	*NO_2*	*N*
HD402	*Blyth Road 2nd Tube, Hayes Lamp Post (17) (western most lamp post in front of 133 Enterprise House)*	*509328*	*179603*	*Roadside*	*Y*	*5*	*2*	*1.5*	*NO_2*	*N*

3 Comparison of Monitoring Results with Air Quality Objectives

The results presented in this section are shown after adjustments for "annualisation", the details of which are described in Appendix A. It must be stressed that the air quality objectives, compliance with which provides the key indicator used in this report, do not indicate 'safe' levels of air pollution. WHO and the UK's Committee on the Medical Effects of Air Pollutants (COMEAP) both recognise that some part of the population has significant sensitivity to air pollution and that there is no recognised threshold for effects of these pollutants at the population level.

3.1 Automatic monitoring sites

The results for NO_2 from the automatic sites are shown in Table D1. No exceedances were found for the other pollutants that are monitored in the Borough though results are presented in the following subsections to this chapter.

Table D1. Annual Mean NO_2 from automatic monitoring sites ($\mu g.m^{-3}$).

Site ID	Site type	Valid data capture for monitoring period % [a]	Valid data capture, 2016, % [b]	Annual Mean Concentration ($\mu g.m^{-3}$) [c]						
				2010	2011	2012	2013	2014	2015	2016[d]
LHR2	Heathrow	92.5	92.5	**49.6**	**52.0**	**47.7**	**47.9**	**46.4**	**44.2**	**47**
HIL	London Hillingdon	98.6	98.6	**53.6**	**55.0**	**57.1**	**52.8**	**57.5**	**51.9**	**52.0(51.2)**
HI1	South Ruislip	99.0	99.0	**46.9**	**41.7**	**52.0**	**45.0**	**44.4**	**48.4**	**44.0(42.9)**
HI3	Oxford Avenue	99.3	99.3	**41.0**	**44.3**	**44.0**	39.2	36.7	34.5	39 **(41.9)**
HRL	London Harlington	90.5	90.5	34.5	34.0	34.5	37.1	36.5	32.0	34
SIPS	Hillingdon Sipson	97.4	97.4	38.3	37.0	35.2	36.5	36.6	33.7	36 (35.2)
HIL1	Hillingdon Harmondsworth	97.5	97.5	30.5	31.5	31.8	30.4	29.2	28.0	27
T55	Heathrow Green Gates	98.8	98.8	41.2	34.8	33.4	33.5	35.1	32.2	34 (34.4)
T54	Heathrow Oaks Road	99.2	99.2	37.2	30.5	30.3	34.2	32.6	27.4	31
HIL5	Hillingdon Hayes	95.8	95.8	**54.3**	**55.3**	**45.9**	**47.0**	**52.9**	**46.2**	**47.0 (45.9)**

Notes: Exceedance of the NO_2 annual mean air quality objective of 40µgm^{-3} are shown in **bold**.
NO_2 annual means in excess of 60µg m^{-3}, indicating a potential exceedance of the NO_2 hourly mean AQS objective are shown in bold and underlined.
[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year
[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)
[c] Means were "annualised" in accordance with LLAQM Technical Guidance, where valid data capture was less than 75%

[d] Means (in brackets) were "corrected for relevant exposure" in accordance with LLAQM Technical Guidance. Results are only presented where applicable. Where either the site type was background or airport, and/or the background values higher than total measured concentrations, no value was calculated

Figure 7 shows that for most sites, taking the values not corrected for relevant exposure in the interests of comparability with previous years, the concentrations in 2016 were higher than in the preceding year. It is likely that this highlights the variability, year on year, in meteorology, with meteorology in 2015 having been more favourable for air quality than the surrounding years.

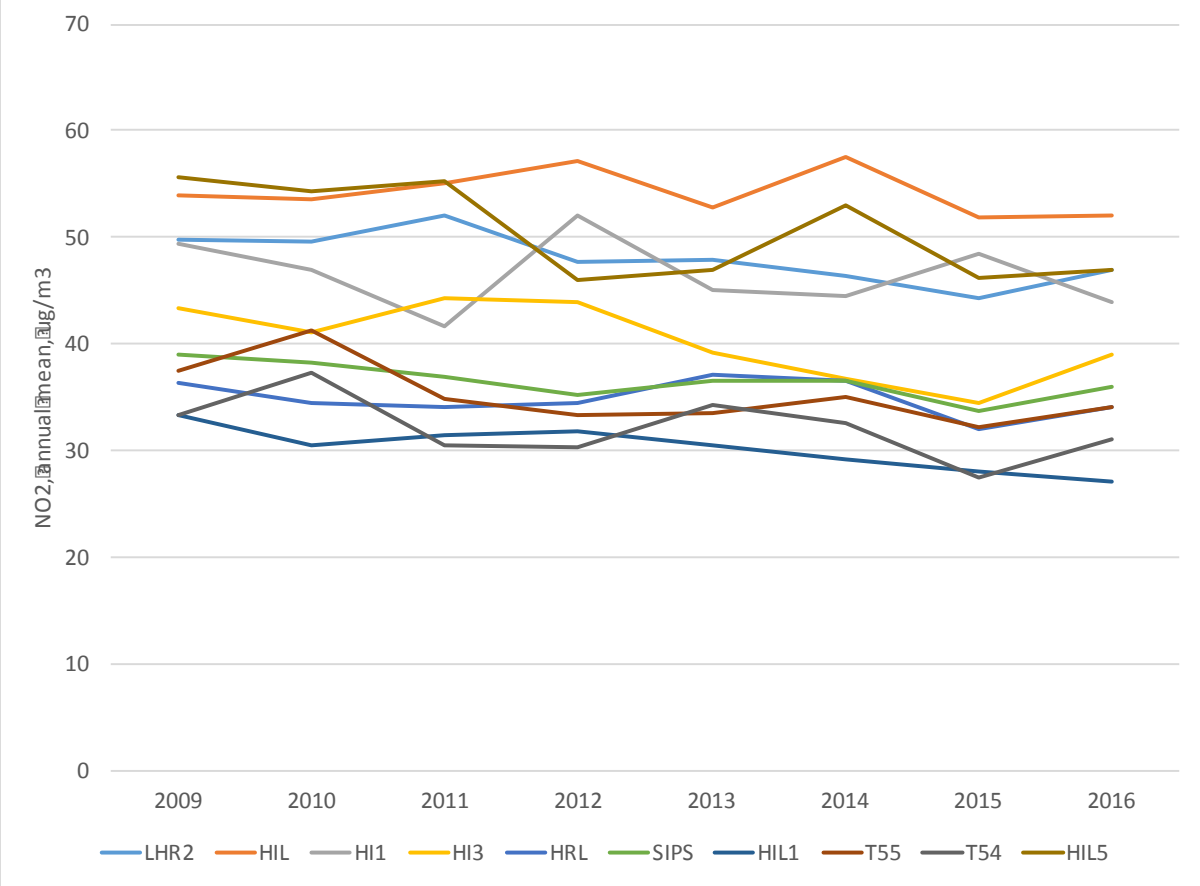


Figure 7. NO_2 concentrations at the automatic monitoring stations, 2009-2016.

Figure 8 presents aerial views showing the close proximity of continuous monitoring sites showing exceedances to housing and other sites of 'relevant exposure', mapped against NO2 annual concentrations as per LAEI 2013, updated April 2017.

These figures show that only for London Heathrow (LHR2) (bottom right) is there any distance between housing and the monitored exceedance. For the London Hillingdon site (HIL, top left) it is noted that the monitoring site is close not only to housing but also to the Cherry Lane Primary School. For Hillingdon South Ruislip (HI1, top right) it is noted that, when the fall off distance formula is applied to the monitored value for 2016 (44μg/m^3), it is observed an exceedance at the closest relevant public exposure location (42.9μg/m^3), in contrast with the 2013 LAEI modelled predictions at this location (LAEI 2013, updated values April 2017).

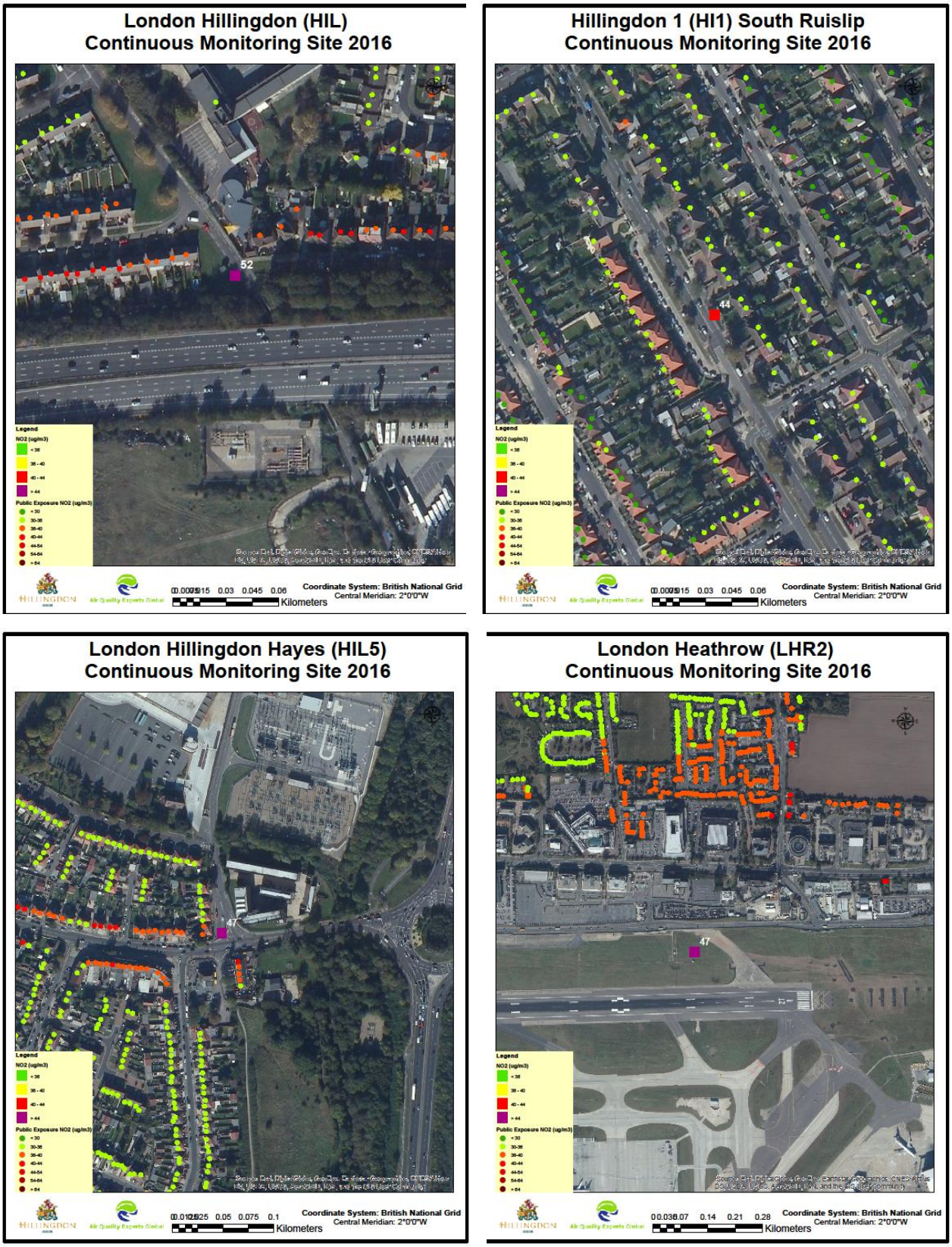


Figure 8. Proximity of automatic monitoring stations reporting exceedance for annual mean NO_2 in 2016 and relevant exposure.

3.2 Non-automatic monitoring sites using diffusion tubes

Results for the non-automatic monitoring sites are shown in Table D2. For 2016 there were some problems with data collection that affected capture rates. As a result, caution must be taken when using 2016 diffusion tube data and users of the data supplied here are recommended to use 2015 data instead to support air quality assessments for planning applications, and consult with the Borough Council for selection of sites and background locations.

Table D2. Annual mean NO_2 ratified and bias-adjusted – non-automatic monitoring sites using diffusion tubes (DT) (μg m^{-3}).

Site ID	Site type	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Annual Mean Concentration (μg.m^{-3}) [c]							
				2010	2011	2012	2013	2014	2015	2016	2016[d]
HD31	DT	72	72	**46.7**	**45.7**	**46.8**	**43.4**	**47.3**	**41.1**	34.3	34.3
HD43	DT	75	75	**51.7**	**44.4**	**45.6**	**47.6**	**46.3**	**42.8**	**42.8**	39.9
HD46	DT	83	83	**49.2**	**43.3**	**45.4**	**45.8**	**46.7**	**43.2**	40.2	40.2
HD47	DT	83	83	35.7	30.6	31.4	33.2	32.4	28.9	26.8	25.0
HD49	DT	83	83	28.1	26.1	26.0	25.4	26.5	22.1	20.9	19.5
HD50	DT	83	83	38.9	**44.4**	39.7	39.8	**42.6**	**40.6**	32.3	29.8
HD51	DT	83	83	35.6	33.9	36.6	34.3	36.7	33.3	29.3	26.7
HD52	DT	83	83	37.7	34.0	37.4	38.5	37.6	32.3	30.0	27.6
HD53	DT	83	83	**42.6**	**41.4**	**45.1**	**40.7**	**46.8**	**42.3**	39.0	36.0
HD55	DT	83	83	**41.8**	38.6	**41.0**	38.9	40.0	35.7	34.7	32.1
HD56	DT	75	75	37.3	36.0	37.0	35.5	35.4	31.4	32.1	29.6
HD57	DT	83	83	39.9	37.3	39.7	37.9	39.9	35.6	35.5	32.7
HD58	DT	58	58	**41.4**	40.2	40.4	38.4	**42.1**	37.2	34.2	31.7
HD59	DT	83	83	35.1	35.1	36.1	35.5	33.6	29.1	30.3	27.7
HD60	DT	58	58	32.4	30.0	32.5	31.1	31.9	26.8	24.2	22.0
HD61	DT	83	83	38.8	35.6	34.5	37.5	37.3	34.4	31.9	29.3
HD65	DT	83	83	33.7	33.1	33.3	31.5	34.1	29.9	26.7	24.9
HD67	DT	83	83	32.9	30.7	29.5	29.8	30.7	28.7	25.8	23.8
HD70	DT	83	83	26.5	24.4	25.7	24.0	23.8	19.8	19.1	17.8
HD73	DT	50	50	28.5	26.9	28.1	27.1	28.1	21.7	32.8	30.1
HD74	DT	83	83	32.5	29.0	28.7	28.6	29.4	24.6	24.0	22.0
HD75	DT	83	83	30.2	28.3	29.3	28.5	28.7	23.7	22.8	21.1
HD200	DT	83	83	-	-	36.7	**41.7**	**40.8**	35.2	29.4	27.1
HD202	DT	83	83	-	-	32.5	35.9	35.5	26.7	26.1	23.9
HD203	DT	58	58	-	-	**44.8**	**43.4**	**46.8**	**41.9**	**40.9**	37.9
HD204	DT	83	83	-	-	37.5	38.3	39.7	**40.9**	32.0	29.5
HD205	DT	83	83	-	-	**41.8**	40.0	**42.0**	**41.1**	35.9	33.3
HD206	DT	83	83	-	-	29.5	29.2	35.0	30.0	29.6	27.2
HD207	DT	50	50	-	-	30.9	35.2	38.1	31.2	24.9	23.6
HD208	DT	67	67	-	-	28.5	29.6	30.5	27.3	28.9	19.6
HD209	DT	58	58	-	-	33.7	32.0	33.7	30.5	30.9	30.0
HD210	DT	83	83	-	-	**48.7**	**48.3**	**51.0**	**43.3**	**42.5**	39.2
HD211	DT	83	83	-	-	33.4	35.9	38.8	34.0	34.8	33.9
HD212	DT	83	83	-	-	33.1	**42.3**	**45.4**	38.5	35.5	32.6
HD213	DT	83	83	-	-	37.5	**40.5**	39.8	37.0	37.4	35.6

Site ID	Site type	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Annual Mean Concentration (µg.m^{-3}) [c]							
				2010	2011	2012	2013	2014	2015	2016	2016[d]
HD214	*DT*	*83*	*83*	-	-	***48.3***	***44.5***	***50.5***	***43.7***	***42.1***	*39.1*
HD302	*DT*	*75*	*75*	-	-	-	-	*38.9*	*30.7*	*30.8*	*29.0*
HD401	*DT*	*83*	*83*	-	-	-	-	-	*30.0*	*27.6*	*25.5*
HD402	*DT*	*67*	*67*	-	-	-	-	-	*32.1*	*32.3*	*29.9*

Notes: Exceedance of the NO_2 annual mean AQO of 40 µgm^{-3} are shown in **bold**.
NO_2 annual means in excess of 60 µg m^{-3}, indicating a potential exceedance of the NO^2 hourly mean AQS objective are shown in bold and underlined.
[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year
[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)
[c] Means were "annualised" in accordance with LLAQM Technical Guidance, where valid data capture was less than 75% and bias adjusted (National Factor applied 0.96)
[d] Means (in brackets) were "corrected for relevant exposure" in accordance with LLAQM Technical Guidance. Results are only presented where applicable. Where either the site type was background or airport, and/or the background values higher than total measured concentrations, no value was calculated

The diffusion tube data show a mix of declining concentrations from 2015 to 2016 at 28 sites and no improvement at 10 sites. This contrasts with the automatic sites where a majority showed increased concentrations (10 stations to 2).

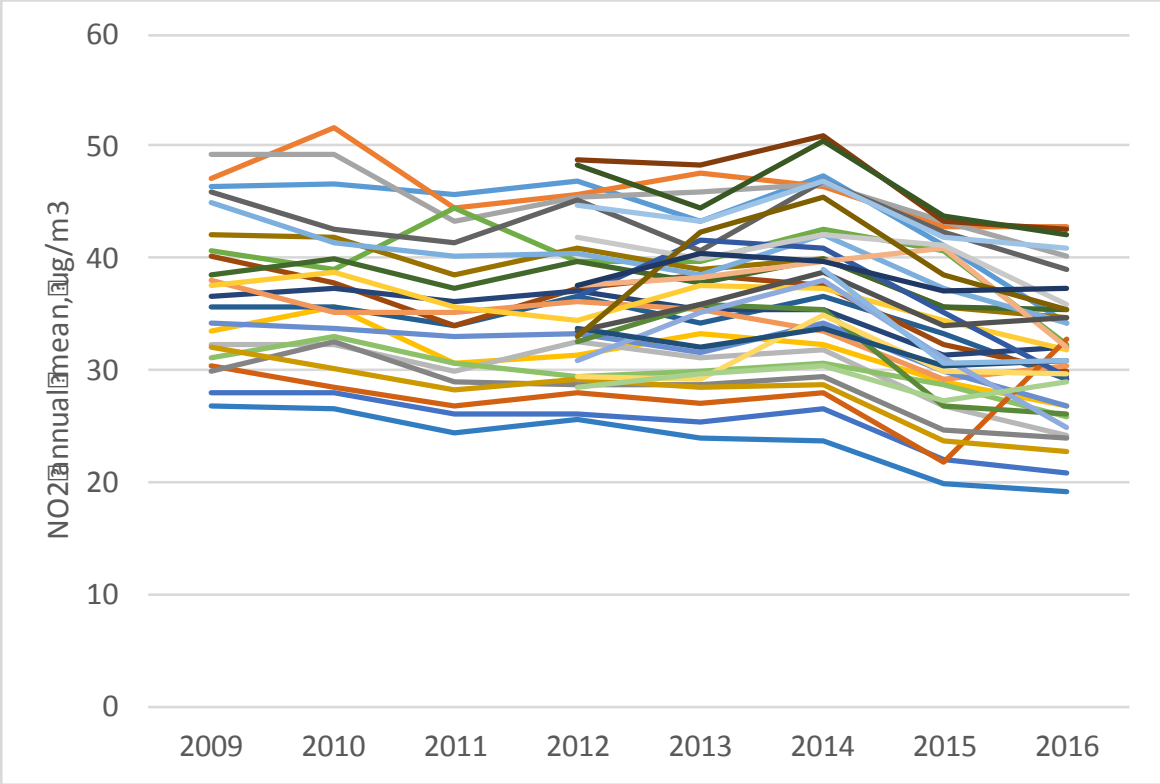


Figure 9. Diffusion tube data showing annual mean NO_2 µg.m^{-3} in Hillingdon, 2009-2016. Values annualised to correct for data capture, but unadjusted for relevant exposure for 2016 for comparability with previous years.

Results for other pollutants and averaging times are shown in Tables E to H, as follows:

Table E: NO_2 automatic monitoring results: comparison with 1-hour mean objective.

There are rather few exceedances observed at each station across the period. At each station in any year the number of observed exceedances is within the permitted number of 18, though 2 stations in three different years have come close (HI1 in 2012, HIL5 in 2010 and 2011). For HIL5, the station where most exceedances have been observed, the number of exceedances has declined over time reaching its lowest figure in 2016 (1 exceedance). Elsewhere there are too few exceedances to indicate a trend, though it is perhaps notable that there were 8 exceedances in 2016 at LHR2.

Table F: Annual mean PM_{10} automatic monitoring results.

There is no clear trend in PM_{10} levels over the 7-year period across the 9 monitoring stations.

Table G: PM_{10} automatic monitor results: Comparison with 24-Hour mean objective

Again, no clear trend in data is evident. The number of exceedances increased noticeably at South Ruislip, Oxford Avenue and Hillingdon Hayes in

2016 but fell sharply at London Harmondsworth Osiris, though at no site did the number of exceedances go beyond the permitted maximum.

Table H: Annual mean $PM_{2.5}$ automatic monitoring results ($\mu g.m^{-3}$).

Over the 7-year period there is an indication of a decline in concentrations for LHR2 and HRL. Concentrations in 2016 are very similar to those in 2015.

Table E. NO_2 automatic monitoring results: comparison with 1-hour mean objective

Site ID	Site name	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Number of Hourly Means > 200 µg.m^{-3} [c]						
				2010	2011	2012	2013	2014	2015	2016
LHR2	Heathrow	*92.5*	*92.5*	*2 (154)*	*0*	*0*	*3*	*0*	*2*	*8*
HIL	London Hillingdon	*98.6*	*98.6*	*0*	*0*	*0*	*0*	*0*	*1*	*2*
HI1	South Ruislip	*99.0*	*99.0*	*7*	*0*	*14*	*0*	*0*	*0*	*2*
HI3	Oxford Avenue	*99.3*	*99.3*	*1 (142)*	*0*	*0 (124)*	*1 (132)*	*0 (124)*	*2*	*0*
HRL	London Harlington	*90.5*	*90.5*	*0*	*0*	*0*	*5 (172)*	*0*	*0*	*0*
SIPS	Hillingdon Sipson	*97.4*	*97.4*	*0*	*0*	*0*	*0*	*0*	*3*	*0*
HIL1	Hillingdon Harmondsworth	*97.5*	*97.5*	*0 (101)*	*0*	*0 (123)*	*0*	*0*	*1*	*0*
T55	Heathrow Green Gates	*98.8*	*98.8*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
T54	Heathrow Oaks Road	*99.2*	*99.2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
HIL5	Hillingdon Hayes	*95.8*	*95.8*	*15*	*15*	*2*	*4*	*2*	*2*	*1*

Notes: Exceedance of the NO_2 short term AQO of 200 µgm^{-3} over the permitted 18 days per year are shown in **bold**.

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means are "annualised" in accordance with LLAQM Technical Guidance where valid data capture is less than 75%

Table F. Annual mean PM_{10} automatic monitoring results (µg.m^{-3})

Site ID	Site name	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Annual Mean Concentration (µgm^{-3}) [c]						
				2010	2011	2012	2013	2014	2015	2016
LHR2	Heathrow	*98.9*	*98.9*	*23.8*	*25*	*24.8*	*24.6*	*18.6*	*13*	*15*
HI1	South Ruislip	*98.0*	*98.0*	*22.4*	*24*	*24.1*	*22.6*	*23.2*	*24*	*22*
HI3	Oxford Avenue	*99.5*	*99.5*	*20.4*	*23*	*22.4*	*21*	*21.5*	*21*	*20*
HRL	London Harlington	*99.8*	*99.8*	*19.7*	*22*	*17.7*	*20*	*19.6*	*16*	*15*
HIL1	Hillingdon Harmondsworth	*99.3*	*99.3*	*17.8*	*21*	*19.7*	*21.9*	*21*	*22*	*23*
HIL4	London Harmondsworth Osiris	*97.1*	*97.1*	*23.5*	- [d]	- [d]	*17.4*	*12.1*	*17*	*16*
T55	Heathrow Green Gates	*98.8*	*98.8*	*20*	*21*	*20.8*	*20.4*	*17*	*14*	*14*
T54	Heathrow Oaks Road	*99.2*	*99.2*	*21.8*	*24*	*21.3*	*21*	*18.2*	*14*	*15*
HIL5	Hillingdon Hayes	*97.7*	*97.7*	*23.5*	*25*	*25.4*	*29.4*	*34.5*	*28*	*28*

Notes: Exceedance of the PM_{10} annual mean AQO of 40 µgm^{-3} are shown in **bold**.

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

[d] Data capture below required level so values not reported

Table G. PM_{10} automatic monitor results: Comparison with 24-Hour mean objective

Site ID	Site name	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Number of Daily Means > 50 µgm^{-3} [c]						
				2010	2011	2012	2013	2014	2015	2016
LHR2	Heathrow	*98.9*	*98.9*	*4*	*19*	*18*	*12*	*6*	*3*	*3*
HI1	South Ruislip	*98.0*	*98.0*	*5*	*21*	*16*	*10*	*18*	*3*	*9*
HI3	Oxford Avenue	*99.5*	*99.5*	*2*	*16*	*10*	*6 (34)*	*6*	*3*	*11*
HRL	London Harlington	*99.8*	*99.8*	*12*	*1*	*8 (37)*	*9*	*6 (36)*	*3*	*5*
HIL1	Hillingdon Harmondsworth	*99.3*	*99.3*	*2 (32)*	*10*	*5 (37)*	*7*	*7*	*4*	*4*
HIL4	London Harmondsworth Osiris	*97.1*	*97.1*	*7 (44)*	*- [d]*	*- [d]*	*2 (34)*	*0*	*17*	*0*
T55	Heathrow Green Gates	*98.8*	*98.8*	*0*	*16*	*8*	*8*	*2*	*3*	*3*
T54	Heathrow Oaks Road	*99.2*	*99.2*	*2*	*16*	*11*	*8*	*2*	*5*	*2*
HIL5	Hillingdon Hayes	*97.7*	*97.7*	*7*	*18*	*15 (47)*	*17 (46)*	*45 (60)*	*14*	*32*

Notes: Exceedance of the PM_{10} short term AQO of 50 µg m^{-3} over the permitted 35 days per year or where the 90.4th percentile exceeds 50 µg m^{-3} are shown in **bold**. Where the period of valid data is less than 90% of a full year, the 90.4th percentile is shown in brackets after the number of exceedances.

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

[d] Data capture below required level so values not reported

Table H. Annual mean $PM_{2.5}$ automatic monitoring results (µg.m^{-3})

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Annual Mean Concentration (µgm^{-3}) [c]						
			2010	2011	2012	2013	2014	2015	2016
LHR2	*98.9*	*98.9*	-	*11.0*	*11.0*	*11.0*	*9.9*	*9.0*	*10.0*
HRL	*99.8*	*99.8*	-	*16* [d]	*13.0*	*14.0*	*14.0*	*10.0*	*10.0*
HIL4	*97.1*	*96.3*	-	[e]	[e]	[e]	*6.9*	*7.0*	*6.1*
T55	*98.7*	*98.7*	-	*10.0*	*10.0*	*10.0*	*10.0*	*9.0*	*10.0*
T54	*99.2*	*99.2*	-	*10.0*	*10.0*	*10.0*	*10.0*	*10.0*	*10.0*

Notes: Exceedance of the $PM_{2.5}$ annual mean AQO of 25 µgm^{-3} are shown in **bold**.

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means should be "annualised" in accordance with LLAQM Technical Guidance, if valid data capture is less than 75%

[d] Data capture 84.1%

[e] Data capture below required level so values not reported

4 Commitment to Cleaner Air Borough Criteria

Hillingdon has previously been awarded 'Cleaner Air Borough' Status. Table J demonstrates the Borough's continuing commitment in 2016. Further information on a number of the actions is provided below in the Sections identified under 'Evidence'.

Table J. Commitment to Cleaner Air Borough Criteria.

Theme	Criteria		Achieved (Y/N)	Evidence
1. Political leadership	***1.a***	Pledged to become a Cleaner Air for London Borough (at cabinet level) by taking significant action to improve local air quality and signing up to specific delivery targets.	Y	Completed. This was a requirement to receive funding from the Mayors Air Quality Fund which the Borough was successful with. The Council has taken the lead on continuing the work commenced under the MAQF project, continuing the electric vehicle project specifically for Hillingdon. More details are provided below in Section 5.3.
	1.b	Provided an up-to-date Air Quality Action Plan (AQAP), fully incorporated into LIP funding and core strategies.	Y	The Council has worked with the GLA to refine a number of Air Quality Focus Areas in Hillingdon. This was published in December 2016. This will form the basis of the Action Plan which is currently under review for consultation in 2017.
2. Taking action	**2.a**	Taken decisive action to address air pollution, especially where human exposure and vulnerability (e.g. schools, older people, hospitals etc.) is highest.	Y	The Borough is undertaking a project, funded by the LIP, to provide a green barrier for the protection of nursery children where the outside play area is close to a busy major road and pollution monitoring indicates levels above the national AQ objective. The Borough will also work with the nursery to produce a bespoke travel plan. [See 5.2.5, 5.2.6] Environmental enforcement officers are targeting areas such as Health Centres in regard to no idling vehicles. [See 5.2.8]
	2.b	Developed plans for business engagement (including optimising deliveries and supply chain), retrofitting public buildings using the RE:FIT framework, integrating no engine idling awareness raising into the work of civil enforcement officers, (etc.)	Y	Following the success of the Heathrow Villages PSPO (between 17th August 2016 till 26th February 2017 143 FPNs for no idling were issued), the Council is currently consulting to see if there is support for the no idling enforcement to be carried out Borough-wide. The consultation went live on 20th March 2017. [See 5.2.3 on the electric vehicles trial; 5.2.8 on anti-idling; 5.3.2 on Heathrow].
	2.c	Integrated transport and air quality, including by improving traffic flows on Borough roads to reduce stop/start conditions	Y	The Borough has implemented a weight restriction enforcement via CCTV to deter lorries from passing through a narrow village High Street. This is anticipated to decrease the congestion formed by lorries negotiating a narrow street with associated high street parking plus removing lorries from a residential area. Improvements t o junctions such as the Grapes junction to improve safety and access for sustainable modes. [See various targeted actions under 5.1 and 5.3.3 for liaison with Highways England]
	2.d	Made additional resources available to improve local air quality, including by pooling its collective resources (s106 funding, LIPs, parking revenue,	Y	S106 money and LIP money have been used to match fund projects such as: • the planting of trees across the Boroughs with priority given to heavily congested roads above the air quality

Theme	Criteria		Achieved (Y/N)	Evidence
		etc.).		objective (see para 5.2.5): • a joint monitoring and traffic monitoring project to establish the baseline conditions in potential air quality focus areas outside the current AQMA.
3. Leading by example	**3.a**	Invested sufficient resources to complement and drive action from others	Y	One full time officer although air quality only part of remit, extra resources brought in via consultants where funding allows. However, there is close liaison with colleagues in Transport and other Council Departments and the Council is engaging with Highways England [see 5.3.3] and Heathrow Airport [see 5.3.2].
	3.b	Maintained an appropriate monitoring network so that air quality impacts within the Borough can be properly understood	Y	All existing AQ monitors maintained. Problems were experienced with the diffusion tube network in 2016, though these have been identified and remedied. A full contract is in place for the coming year.
	3.c	Reduced emissions from council operations, including from buildings, vehicles and all activities.	Y	The council has made a 65% reduction in energy consumption from the change of electric lighting to LED in two council owned multi storey car parks. The Council is also extending the electric vehicles trial to the Borough's own fleet [see 5.2.3].
	3.d	Adopted a procurement code which reduces emissions from its own and its suppliers activities, including from buildings and vehicles operated by and on their behalf (e.g. rubbish trucks).	Y	A full review is currently being undertaken in regard to how the council procure and run its council fleet. All options will be considered including the incorporation of low and zero emission vehicles where applicable to the council operations, along with the potential to set minimum emission standards for all vehicles run by/on behalf of the council.
4. Using the planning system	**4.a**	Fully implemented the Mayor's policies relating to air quality neutral, combined heat and power and biomass.	Y	All approved planning applications must meet the Mayor's requirements relating to AQ neutral and CHPs. The Council ask for a further requirement for better than air quality neutral in areas of poor air quality i.e. in Air Quality Focus Areas;
	4.b	Collected s106 from new developments to ensure air quality neutral development, ***where possible***	Y	The Council, via a Planning Appeal, has secured the sum of £540k from Heathrow Airport Ltd for upgrades to the bus routes though Longford village. The Borough will work with TfL to ensure the delivery of these changes
	4.c	Provided additional enforcement of construction and demolition guidance, with regular checks on medium and high risk building sites.	Y	The Council now requires, by condition, the confirmation of sign up to the NRMM register from each relevant development. The Council will explore joining one of the current projects using a jointly commissioned NRMM compliance officer if funds are available.
5. Integrating air quality into the public health system	**5**	Included air quality in the Borough's Health and Wellbeing Strategy and/or the Joint Strategic Needs Assessment	Y	The Joint Health and Wellbeing Board have adopted the theme of integrating health and air quality. This Board will scrutinise the review of the Air Quality Action Plan. [See 5.2.1].
6. Informing the public	**6.a**	Raised awareness about air quality locally	Y	The number of alerts sent out to Hillingdon residents between June 2016 to Jan 2017 was 3,195. An additional 11 subscribers signed up within the Borough A respiratory needs assessment for the Borough has been

Theme	Criteria		Achieved (Y/N)	Evidence
				commissioned. Investigating the relationship with poor air quality areas will form part of the analysis

5 Action to Improve Air Quality

This section starts with a review of highlights in the progress on the Borough's air quality action plan in 2016. It is followed by Table K which provides information against each measure in the course of implementation of the AQAP since it was agreed by the Council in 2004. It is intended that the plan will be revised this year, uncertainty about future developments at Heathrow Airport having previously delayed the revision process.

5.1 Hillingdon led improvements to transport infrastructure targeted on the Focus Areas

The Council has undertaken a number of improvement measures at specific sites within Air Quality Focus Areas, as follows:

5.1.1 Springfield Road project

Springfield Road is located in the Ossie Garvin Air Quality Focus Area. This road is industrial in nature with a large number of HGVs accessing the road but it is also the only vehicle access to the Guru Nanak Sikh Academy, the Minet Country Park and the Hillingdon Cycle Circuit. There are potential conflicts between the different users with a number of HGVs deterring pedestrians. The project will deliver an evidence based package of measures to alleviate problems of road traffic noise, pollution, parking and road safety.

5.1.2 The Grapes Junction

The Grapes Junction is part of the Uxbridge Road Air Quality Focus Area. This junction is currently being reconfigured to ease congestion and allow safer access for pedestrians and cyclists.

5.1.3 A40/West End Road

The A40/West End Road junction is an Air Quality Focus Area. Working in partnership with TfL this project aims to alleviate congestion at this pollution hotspot by reconfiguration of the slip road from the A40 to West End Road. In conjunction with this the council is widening the footpath to incorporate safer access for cyclists.

5.1.4 A40/Long Lane

The A40 / Long Lane junction is an Air Quality Focus Area. The Council is using LIP funding to increase cycle parking at Hillingdon station which is located close to this junction. This will encourage the use of sustainable modes to access the tube lines into London at Hillingdon station.

5.1.5 Harlington Corner/Bath Road

The Harlington Corner / Bath Road junction is in the Heathrow Air Quality Focus Area. The Council is working with Tfl to make improvements to this busy transport interchange to ease congestion and make better priority for buses.

5.1.6 Bull's Bridge roundabout

The Bull's Bridge roundabout is in the Hayes Air Quality Focus Area. Access to the busy junction can cause large traffic queues along residential roads such as North Hyde Road. The Council is working with TfL and other neighbouring Boroughs to investigate what improvements can be made to this roundabout to alleviate congestion. The project will incorporate the portion of the A312 from Bulls Bridge down to the junction with the M4 at Junction 3.

5.2 Other Hillingdon led improvements

5.2.1 Health

Along with the promotion of the AirText service, the Hillingdon Public Health team are currently at the early stages of scoping a respiratory needs assessment across the Borough. Air quality is being included within the scope. The air quality and health teams at Hillingdon are working in close collaboration, together with transport colleagues, to update the Hillingdon's Local Action Plan.

5.2.2 Modal switch

Hillingdon continues with a Borough-wide programme on improving access to public transport and supporting the promotion of alternative modes of transport.

Under the LIP, cycling improvement programmes, council led bike rides, parking management schemes, improvements for pedestrians all continue to be implemented where there is an identified need. These have been described in more detail in previous Annual Status Reports.

5.2.3 Extension to the MAQF electric vehicle trial across Hillingdon

The Mayor's Air Quality Fund was used for a successful project trialling the use of electric vehicles across businesses in the MAQF partnership, mainly focused in the south of the Borough. The initial marketing, targeted at 350 individual contacts, led to 16 official applications received and 11 business hiring the vans. The trial ran over a 12-week period with over 90% utilisation of the vehicles for the trial period.

The trial demonstrated that the potential business fuel cost savings for operating an electric van, as compared to a diesel van, based on annual mileages of 6,000 miles, 12,000 miles and 24,000 miles would result in annual savings of £330, £673 and £1,350 respectively.

Given the success of the trial, Hillingdon has commissioned an extension to this project for this opportunity to be rolled out to council departments and to businesses across the Borough.

5.2.4 Continuation of MAQF towpath project

The MAQF implemented a project creating better access for cyclists to the canal towpath close to Stockley Park. With Crossrail serving both West Drayton and Hayes stations in 2019, both of which can be accessed via the canal towpath, the Council is continuing to add resources to this project. Using a combination of LIP and s106 funds upgrade of the towpath towards West Drayton was undertaken along with roundabout improvements for cyclists at the Stockley Park roundabout.

5.2.5 Use of green infrastructure

Tree planting

The Borough has been successful in receiving a grant from the GLA for the planting of 182 trees throughout the Borough. As the grant was match funded using s106 air quality money, the project will ensure the planting addresses areas of high NO_2 concentrations. This will include:

- Dawley Road and Bourne Avenue (within the Hayes Air Quality Focus Area)
- Oxford Avenue (within the Heathrow Air Quality Focus Area)
- Long Lane (in the A40/Long Lane Air Quality Focus Area)
- West End Road (in the A40/ West End Road Focus Area)

Nursery School improvements

Day nurseries have been identified across the Borough and ranked in terms of their location in poor air quality areas. A nursery in Uxbridge has been identified, and confirmed via air quality monitoring, as being subjected to levels of pollution above the air quality objective at its outside boundary. As this is situated on a busy road within the Uxbridge Focus Area, a project will be commissioned to incorporate green barriers around the outside play area of the nursery.

5.2.6 Working with Schools

Travel Plans

All schools in the Borough have developed Travel Plans. However, the Council continues to work in this area to ensure that those Plans are enacted and continue to generate benefits. The Hillingdon website [5], funded via the LIP, hosts a bespoke school travel plan area. This allows schools in the Borough to upload their travel plan information including their successes in achieving mode shift. This information will provide a valuable action planning tool as it will allow the identification of schools within the individual Focus Areas and where resources could be targeted to improve a greater mode shift from private car.

[5] https://www.hillingdonstp.org/

Enhancing mode shift
The council, continues to work with schools throughout the Borough to provide safe walking environments around schools with an aim of encouraging mode shift from drop off by private car. CCTV cameras have now been installed on all Keep Clear areas at school gates to enforce no stopping. This will help ensure a safer and healthier walking environment by the schools.

In addition, improvements are made on an individual school basis. For example:

Footpath access to Rabbsfarm Primary School , Yiewsley.
Rabbsfarm Primary School is in the Air Quality Focus Area of West Drayton and Yiewsley. A significant number of pupils attending the school live in the estate to the rear of the school and with no direct access to the school from this area there is a tendency for parents to drive. The school is undergoing expansion under the Primary School Expansion programme. By creating footpath access to this area it is anticipated that the project will encourage more pupils to walk to school.

5.2.7 Travel Plans

Hillingdon continues to monitor the implementation of travel plans in the Borough via the West Trans group which funds an officer to work across all the Boroughs. The latest report covers the period from February 2016 to January 2017. For Hillingdon there are 71 Travel Plans currently being monitored with 81% of these up to date with their progress reports. Highlights include:

- an education institution in Uxbridge where the share of single car driver among staff dropped from 78% in 2009 to 41% in 2016
- a residential development in Hayes (45 units) where 33% of trips are car-sharing.

Both of these sites are located in Air Quality Focus Areas.

5.2.8 No idling vehicles

The council continues to implement the no idling vehicles legislation via the Heathrow Villages Public Spaces Protection Order. From the August 2016 to February 2017 143 fixed penalty notices for idling vehicles were issued. There is to be a consultation, starting in Spring 2017, to assess the support for a Borough-wide PSPO which will cover no idling across the whole Borough.

5.3 Regional improvements

5.3.1 Delivery and Service Plans (DSPs)

DSPs concern the movement of freight and goods more generally in the Borough. Conditioned as a requirement with relevant planning developments there is limited information in terms of how such DSPs are implemented, monitored and what their overall environmental impacts is in terms of improvements. The Westtrans group has commissioned a study to:

- Identify a key number of developments throughout west London with DSPs as planning conditions;
- Investigate the current implementation and overall impact;
- Define a best practice guide for what a DSP should deliver.

5.3.2 Heathrow Airport

This is situated in the Heathrow Air Quality Focus Area. Heathrow's 2016 blueprint for reducing emissions sets out a plan for working with partners to improve local air quality by outlining the top 10 actions Heathrow focused on in 2016 in terms of local air quality. This included actions to invest in more electric vehicle charging points, switch more of the Heathrow Airport Ltd vehicle fleet over to electric, and promote the uptake of newer and cleaner aircraft.

Examples of the outputs include:

- by the end of 2016 there were over 30 electric vehicles in Heathrow's fleet or on order;
- approximately £400,000 was invested in 2016 to install electric vehicle chargers, with a further £1m funding approved. This included the installation of 12 new charging points for operational vehicles (with funding for a further another 21 approved);
- two new charging points installed for visitors and colleagues in the Compass Centre car park and upgrade of the 6 dual charging points located in the T3, T4 and T5 short stay car parks;
- the number of aircraft movements made by the newest aircraft (CAEP8) has increased to over 20%

5.3.3 M4 motorway managed by Highways England (HE)

This is in the M4 corridor Air Quality Focus Area. At the DCO Planning Inquiry for the proposal to upgrade the M4 junctions 3-12 to Smart Motorway, the Council gave evidence that the air quality assessment provided by the HE was over-optimistic in terms of predicted reductions in pollution arising from the impact of the M4 Smart Motorway scheme. The HE air quality assessment indicated that with the implementation of continual hard shoulder running the air quality levels would be reduced to below 40$\mu g/m^3$ by 2022, the opening date of the scheme. The current level at London Hillingdon, situated 30m north of the M4, is 52$\mu g/m^3$ there is relevant public exposure. Following Council representations at the Inquiry the DCO has now included the requirement for the HE for monitoring and provision of mitigation should the predicted reductions not materialise (see Section 1.4, above).

5.4 Progress against each measure

Table K summarises progress against each measure. The column headed 'Progress' provides an indication of the status of each measure, as follows:

- **Complete**: Measures for which objectives have been met and further action is not required.
- **Ongoing**: Measures which are fully in place, but require continuing action. Examples include the implementation of school travel plans and annual reporting on progress with the action plan.
- **In progress**: A small number of measures that are not fully implemented but for which the council believes that additional resource or interest from external organisations would be of benefit.
- **Stopped**: A small number of measures that featured in the original AQAP, but which were concluded on more detailed assessment to not warrant implementation, with resource better spent elsewhere.

Specific progress in the reporting year is also documented in this column, particularly in items highlighted in blue font. Revision of the action plan will provide further information (for example on key performance indicators) that is not presented here. As noted elsewhere, revision of the plan has been delayed by uncertainty around developments at Heathrow, though plans are now firmly in place for undertaking the revision this year.

The column headed ‘Further information’ provided additional details on the overall implementation of each measure.

Table K. Delivery of Air Quality Action Plan Measures

	Action	Progress	Further information
1. Switching to Cleaner Transport Modes			
1.01	Establish a Green Travel Plan for Hillingdon.	In progress.	The Borough has undertaken a number of activities to promote cycling and modal shift more generally amongst council staff.
1.02	Improve access to, and quality of, public transport travel information for people living and working in the Borough.	Ongoing.	Info available from TfL at https://www.tfl.gov.uk/plan-a-journey/. The provision of public transport information will be part of planning obligations in relevant qualifying developments.
1.03	Encourage the development of more dedicated cycle (priority) lanes and signalling.	Ongoing. Action in reporting year includes council led events, improvements to Hillingdon Canal Cycle Path and Hanworth Cycle Way improvements. In the reporting year the A40 / West End Road junction is being reconfigured and will incorporate safer access for cyclists. Grapes Junction in the Uxbridge Road Focus Area is being reconfigured to ease congestion and increase safety for pedestrians and cyclists. Better access for cyclists to the canal towpath close to Stockley Park has been created, building on an earlier project funded by the MAQF.	Earlier activities include improving 17 cycling routes across the AQMA and funding for cycle training.
1.04	Extend provision of more parking for motorcycles, mopeds and bicycles at public sites and new developments.	Ongoing, with particular attention in the reporting year on the funding of the Brunel University Student Cycling Champion whose responsibilities include identifying the need for cycle parking. See 1.07. In the reporting year, LIP funding is being used to increase cycle parking at Hillingdon Station in the A40 / Long Lane Junction Focus Area.	Past work has improved parking opportunities at various locations in the Borough, e.g. Hayes and Harlington Station.
1.05	Improve provision for pedestrians.	See 2.01 For the reporting year, improvements have been made at the Grapes Junction and in the Springfield Road Project (Ossie Garvin Focus Area) to the benefit of pedestrians.	Various actions to improve pedestrian access and safety have been implemented in the course of the AQAP.

	Action	Progress	Further information
1.06	Introduce more Safe Routes to School throughout the Borough with special regard to the schools within the highest exceedence areas.	Ongoing. In the reporting year, 72 schools have been working with the Council on their school travel plan to try and achieve a level of accreditation for their plans. 39 schools achieved engaged recognition. Of the 38 schools that were able to provide detailed modal shift data - 27 schools showed a positive move away from car use. In July 2015 15 Bronze, 12 Silver and 6 Gold awards were presented. The six schools which have received Gold Accreditation include 4 within the AQMA. Footpath access to Rabbsfarm Primary School from the estate largely served by the school is being developed to encourage walking. CCTV cameras are now in place at all school gates to enforce no stopping regulations. A website has been developed to take forward the School Travel Plan Programme into a further phase, ensuring that plans do not become dormant.	All schools in the Borough have travel plans. The use of green infrastructure is also being trialled at Bitwell School.
1.07	Ensure Green Travel Plans are a requirement for all businesses (new and existing) employing more than a specified number of people in the Borough.	Ongoing. In the reporting year, Brunel University was identified as a major source of Borough traffic. Brunel University Student Cycling Champion funded via WestTrans group. To include route planning, cycle parking and security, bike loans and training. Other highlights for 2015/2016 include: • Increase in cycling for a large factory from 3 cyclists in 2012 to 31 in 2015; • Reductions in driving a car alone for employees at an industrial unit from 72% (2014) to 66.7% (2015) accompanied by a 3% increase in cycling and 4% increase in walking and bus use. Monitoring of Travel Plans continues via the West Trans Group. For Hillingdon there are 71 Travel Plans being monitored, 81% of which are considered up to date. Highlights include a drop in single car driver share among staff at an Uxbridge education institution from 78% in 2009 to 41% in 2016, and extensive car sharing at a residential development in Hayes.	Monitoring of the implementation of development control travel plans across the region is undertaken via WestTrans on behalf of the Boroughs. For Hillingdon there are 65 sites with travel plans invoked as planning conditions, 34 of these are currently being implemented as the sites become operational.

	Action	Progress	Further information
1.08	Improve access to, and quality of, public transport travel information on a regional basis both inside and outside the GLA boundary.	Complete	Actions led by TfL. See 1.02.
1.09	Seek to ensure improvements in overall public transport service (facilities, cleanliness, safety, frequency, reliability) across the Borough and West London, and particularly in declared AQ Management Areas AQMAs.	Ongoing. In 2015, improvements made to bus stop accessibility. Work on all bus stops on 10 routes now completed, including key routes within AQMA. Includes links from Uxbridge to Hayes and Harlington rail station which will increase in importance with CrossRail. Objective to complete all bus stops in the Borough by end 2016.	
1.10	Improve the north-south public transport provision in the Borough.	Ongoing. Improvement of North-South links remains a priority in LIP2.	
1.11	Support multi modal travel by further development of public transport interchanges for rail/cycle/bus/walking both within Hillingdon and the West London area.	Ongoing.	Various actions have been undertaken in the life ot he AQAP, including station access improvements.
1.12	Encourage development of efficient and high quality bus corridors.	Ongoing, see 1.09.	
1.13	Investigate potential for more night buses.	Complete.	Actions led by TfL, with an increase n the number of night buses operating in the Borough over the course of the AQAP.
1.14	Investigate the feasibility of working with relevant stakeholders to subsidise bus, train and underground fares in order to achieve significant modal shift.	Complete.	Recognised that in the current economic climate there is no potential for further subsidies to public transport.

2. Tackling Through Traffic

2.01	Introduce Home Zones/20 mph in residential areas subject to significant amounts of through traffic that should use alternative routes.	Ongoing. In the reporting year, a freight study was conducted on Cowley Mill Road in response to HGV use, and mitigatory measures introduced.	In the course of the AQAP, Home Zones have been introduced in the Borough, informed by data from traffic counters.
2.02	Support the West London Transit Scheme project if appropriate.	Complete.	Scheme withdrawn by GLA.
2.03	Ensure the provision of sufficient signage and details of spaces for public car parks.	Ongoing.	New electronic signage in place directing traffic to spaces. Electric charging points also introduced.

	Action	Progress	Further information
2.04	Investigate the creation of Clear Zones.	Ongoing.	Initial feasibility study indicated that this would not be significant benefit in Hillingdon. However, use of parking regulations to control congestion is being revisited, and benefits for air quality will be considered.
2.05	Develop best practice advice to ensure air quality assessments are made for proposals for new transport infrastructure and changes to traffic management.	Complete.	This is now an integral part of the planning process.
2.06	Work in partnership with TfL to implement schemes along the high exceedence corridors designed to smooth traffic flows.	Ongoing.	TfL have identified focus areas for improvements in air quality which includes high exceedance corridors such as the A40.
2.07	Improve coordination of road works and provide more effective signing around them.	Ongoing.	
2.08	Investigate use of high occupancy vehicle lanes and freight priority schemes along the major exceedance corridors such as the M4, A4, A40 and A312.	Ongoing.	Actions on the major roads are being taken forward by the Highways England.
2.09	Investigate the use of light rail/tram schemes along other high exceedence corridors such as the A4 and A40.	Complete.	Concluded that in the current economic climate it is very unlikely that funding would be made available for such a significant infrastructure project. However, the potential to expand any similar initiatives led by Heathrow Airport is being monitored.
2.10	Investigate measures such as variable message signing to smooth traffic flows on the HA/TfL routes M4 and surrounding link roads.	Ongoing. In the reporting year, Hillingdon has considered and responded to initiatives led by Highways England, including raising objection to over-optimistic projections used in modelling.	Smart motorway proposal being led by Highways England.
2.11	Investigate use of speed limits on major roads at the optimal level for NOx and PM10 emissions for the current traffic profile.	Ongoing.	Subject to continuing research by Highways England.
2.12	Identify air quality congestion-related hotspots throughout West London and the appropriate measures for delivering improvement in both congestion and air quality e.g. new access road from the A40 to Ruislip industrial areas.	Ongoing. In the reporting year, initial findings of the Hillingdon hotspot project have been incorporated into a proposal being led by TfL. Work is underway at the Harlington Corner / Bath Road Junction and Bull's Bridge Roundabouts (both in Air Quality Focus Areas) to ease congestion and improve priority for public transport.	Hotspots in Hillingdon have been identified using the new GLA data. Led by TfL.

	Action	Progress	Further information
2.13	Support rail projects that have the potential effect to cut through traffic e.g. CrossRail and extending the Underground system (e.g. Central Line to Uxbridge).	Ongoing.	Hillingdon has responded to all consultations on rail developments affecting the Borough, providing consideration of impacts on air quality.
2.14	Work in partnership to investigate use of fiscal measures, such as road pricing, for reducing traffic on major road networks.	In progress. Hillingdon continues to monitor opportunities.	Limitations on various consultations in connection with Heathrow have meant that this has not been debated in detail. 2014 press release from HAL to say that congestion charging could be considered in the Heathrow area once public transport upgrades are in place.
2.15	Consider establishment of cross-agency regional group to address air quality issues with regards to roads.	Completed.	Heathrow Area Transport Forum rejected measure, but most relevant stakeholders working together on Smart Motorways Management.

3. Promotion of cleaner vehicle technology.

3.01	Develop and implement an Action Plan via the BAA Heathrow Clean Vehicle Programme to make improvements in the Council vehicle fleet with regard to reducing emissions.	Ongoing.	Driver training has been implemented across all council drivers. Vehicle procurement now specifies cleaner vehicles.
3.02	Encourage local businesses and freight operators in Hillingdon to sign up to the Clean Vehicle Programme and develop and implement action plans for reducing emissions.	Ongoing.	Freight audits undertaken.
3.03	Provide training for local authority drivers to minimise emissions, and consider opening training opportunities to other drivers working for businesses in Hillingdon.	Ongoing.	All council drivers were trained. Needs to be considered for future action.
3.04.01	Ensure the implementation of the Idling Vehicles Regulations.	Ongoing. Public Spaces Protection Order has been invoked on the Heathrow Villages to address problems associated with minicab drivers idling whilst waiting to collect passengers from Heathrow. Hillingdon is shortly to start a consultation for a Borough wide Public Spaces Protection Order to cover no idling across the whole Borough.	Regulations enforced, signage erected as need be.
3.04.02	Actively promote the use of the Dirty Diesel Hotline for reporting smoky vehicles spotted in Hillingdon.	Ongoing.	Incorporated into the London No Idling Campaign by TfL.
3.05	Consider the recommendations of the London Low Emission Zone Feasibility Study jointly with the GLA, ALG and TfL.	Completed.	The Council has collaborated with TfL during the set up and operation of the LEZ, for example through consultation process. Hillingdon has also cooperated

	Action	Progress	Further information
			in planning for the new LEZ.
3.06	Install signs in waiting areas of Council premises, bus garages, coach stations and major leisure venues, etc. advising drivers to switch off engines when stationary.	Stopped.	After initial consideration, it was concluded that resource would be better spent on mobile traffic counters.
3.07	Lead the way in trialling new technology, where appropriate, and act as a point of information for businesses and other stakeholders in Hillingdon for cleaner vehicle technologies, national schemes and grant systems for the use of alternative fuels.	Ongoing. Electric Vehicle audit undertaken in the reporting year. One important conclusion was that charging provision for taxis at Heathrow was insufficient, and T5 chargers should be upgraded to fast charging. MAQF funding has been used for an electric van project in the south of the Borough. This is now being extended Borough wide. The project has demonstrated cost savings to businesses.	Council has been active in investigation of electric and hybrid vehicles since 2010, including trialling.
3.08	Participate in the London-wide Vehicle Emissions Testing programme.	Completed.	The Council is interested to participate in any future programme of this type, but measure will not be taken forward until future funding is agreed.
3.09	Investigate the provision of low or zero emission buses for schools within the high exceedence areas.	Completed.	Now linked to Measure 1.06, and specifically the Schools Cleaner Air Zone Project.
3.10	Focusing on areas and corridors of high exceedence within residential areas, investigation into the banning or restricting of traffic, or particular types of traffic, from identified roads.	Ongoing. Camera monitoring of vehicles in South Ruislip has enforced ban on HGVs in a residential area.	Implemented via LEZ on strategic routes, but Borough looking at actions on residential roads (as in the South Ruislip case).
3.11	Investigate the potential for discounts for residents with low emission vehicles in Parking Management Areas.	Completed, but to be revisited under the review of the AQAP.	Concluded that this was not possible under the current economic climate.
3.12	Develop sub-regional Bus Quality Partnerships focussed on addressing the contribution of buses and coaches to emissions.	Completed.	This measure was superseded by the LEZ.
3.13	Work in partnership for the provision of low emission buses in the West London/Heathrow region.	Ongoing, Council has requested that this be a specific mitigation measures in the event that the Cranford Agreement is ended.	
3.14	Ensure freight developments in the West London area are subjected to an air quality assessment	Completed.	Developments are now subject to detailed consideration of air quality impact as a matter of

	Action	Progress	Further information
	before implementation.		routine.
3.15	Work with the West London Freight Quality Partnership to develop a Freight Strategy to include reducing the air quality impact of freight maximising opportunities to move freight from road to other modes e.g. canals.	In progress. Hillingdon continues to monitor opportunities.	Baseline freight map of West London produced. Major signage and HGV routing project undertaken. Hillingdon has also looked at HGV routing around Cowley Mill industrial estate.
3.16	Facilitate the uptake and use of alternative fuels, including water-diesel emulsion. This should include development of appropriate alternative refuelling infrastructure where necessary e.g. charging points for electric vehicles.	Ongoing. In the reporting year, the council has funded maintenance of EV charging points. The council is also signed up to FORS (Fleet Operator Recognition Scheme).	Earlier work includes best practice review of emissions technologies for cab companies, installation of EV charging points and trialling vehicles operating with alternative fuels.
3.17	Lobby national government to provide incentives through the fuel duty system for cleaner fuels, including further vehicle excise duty reductions for retrofitting to smaller vehicles and increased retrofitting grants.	Ongoing.	Taken forward by the West London Alliance, recognising the need for a more holistic approach.
3.18	Work to ensure fiscal encouragement of the adoption of low and zero emissions vehicles through the provision of discounts when entering any proposed LEZ or Congestion charging zone.	Completed.	Taken forward by TfL.
3.19	Promote best practice in terms of emissions management with the train operators, the Strategic Rail Authority and Network Rail.	Completed.	Electrification of the Great Western line will lead to a significant reduction in emissions from the railway in the next decade. No further action required.

4. Measures specific to Heathrow Airport

4.01	Continue to oppose any further expansion at Heathrow that leads to negative air quality impacts.	Ongoing. The council continues to liaise wit Heathrow Airport, and continues to lobby government, etc. against any expansion of Heathrow that would lead to worsened air quality.	Analysis and lobbying activities have been carried out continually through the life of the AQAP.
4.02	Develop system for auditing the ATM limit and parking provisions for operational T5.	Ongoing. Annual report supplied as part of T5 planning conditions with regard to ATM limit.	The Council continues to keep developments in this area under review.
4.03	Audit all air quality conditions for the construction phase of Terminal 5.	Completed.	PM levels continue to be monitored around T5, NO2 also monitored at these sites..

	Action	Progress	Further information
4.04	Pursue the retaining of the T5 related air quality monitoring network post T5 construction.	Completed.	2011-2020 Heathrow AQ Strategy commits to continuation of funding for LHR2, Oaks Road, Harlington sites for NO2, particles and (Harlington only) ozone. Monitoring results to be made available with 24 hours on Heathrow AirWatch website. Highways England monitoring traffic levels linked to Heathrow operation. ATCs in place on Borough roads to monitor Heathrow traffic.
4.05	Quantify and pursue emission reductions for all new on-airport development.	Ongoing.	Enforced through the planning process, which also covers off-airport development including some linked to Heathrow (e.g. developments of hotels and B&Bs).
4.06	Evaluate best practice from European and International airports with regard to the minimisation of air quality impacts and assess feasibility of application at Heathrow.	Ongoing.	Hillingdon part of a European group (Frankfurt, London, Amsterdam, Paris, FLAP group) exchanging information on best practice.
4.07	Work with National Government to ensure the use of all relevant fiscal measures to reduce emissions from Heathrow in order to achieve the 2010 EU limit.	Ongoing.	Hillingdon continues to lobby government. Potential for congestion charging came out of the Airports Commission discussion on Heathrow.
4.08	Assess the potential to set an emissions cap for Heathrow.	Completed.	Concluded that there is no willingness by Heathrow Airport or central government to pursue this option. Such a cap is in place at Zurich.
4.09.1	Assess the potential to use landing emissions charges scheme to create revenue stream for public transport improvements.	Ongoing.	Council continue to lobby for this option, though levies from car parking do go to public transport improvements.
4.09.2	Introduce differentiated landing charges at a level that would force cleaner engine technology.	Ongoing.	Differentiated landing charges ae in place, though it is unclear whether this is at a level that encourages change.
4.10	Audit progress on the BAA Heathrow Air Quality Action Plan (2001-2006).	Ongoing. Progress at Heathrow in the reporting year includes increased deployment of electric vehicles and chargers, and increased share of the newest aircraft (CAEP8) at the airport.	Hillingdon continues to monitor progress on Heathrow Airport's air quality action plans (including developments since the 2001-6 plan).
4.11	Review air quality monitoring regime at Heathrow and identify potential gaps.	Completed.	The monitoring system at Heathrow has been kept under review by Hillingdon, and additional monitors have been installed and maintained as necessary.
4.12	Maintain production of externally audited Emissions Inventory on bi-annual basis.	Ongoing.	Heathrow Airport has continued to produce the emissions inventory. It continues to be externally

	Action	Progress	Further information
			audited.
4.13	Identify the areas where the existing BAA 5 year Action plan can be strengthened.	Ongoing. In the reporting year, Heathrow has published its 'Blueprint for reducing emissions' and 'Reducing traffic: a new plan for public transport'.	Hillingdon has maintained contact with Heathrow Airport throughout and provided comment on plans as appropriate.
4.14	Pursue quantification of measures in the BAA Air Quality Action Plan and Surface Access Strategy in terms of air quality impacts.	Ongoing.	Hillingdon continue to comment on plans from Heathrow and have pushed where necessary for quantification of targets and their effects (for example on modal shift).
4.15	Assess feasibility of Congestion/Access Charging at Heathrow to reduce overall travel movements to the airport.	Ongoing.	Hillingdon continue to lobby on this issue. The Airports Commission has stated that any expansion of Heathrow may require congestion charging to be put in place.
4.16	Assess feasibility of a Heathrow specific LEZ to reduce emissions and accelerate take up of cleaner vehicle technology.	Ongoing.	Heathrow is considering implementation of ULEZ on the airport.
4.17	Assess appropriate target for modal shift to maximise air quality improvements.	Ongoing. In the reporting year, a bespoke app (the Heathrow commuter travel app) has been developed to monitor and incentivise cycling to the airport.	Heathrow has kept the target for staff public transport access at 40%. This is supported by additional actions (see left). It is hoped that the introduction of CrossRail will increase these figures, though more needs to be done.
4.18	Define programme for the establishment of code of practice for airlines best operating practice to maximise reduction of emissions.	Completed.	Programme is defined under Actions 2.1 to 2.7 of the Heathrow Air Quality Strategy 2011-2020.
4.19	Develop best practice guidelines to ensure air quality impact assessments are integral part of relevant transport and transport infrastructure proposals, and that appropriate mitigation measures are inclusive part of any scheme.	Completed.	AQ impact assessments are part of all relevant transport related developments.
4.20	Assess feasibility of specifying emissions criteria for Heathrow taxis, buses and coaches using the Central Bus Terminal, and car hire shuttles, hopper buses etc.	Completed.	Completed via the LEZ. Heathrow is also considering implementation of ULEZ on the airport.
4.21	Ensure the minimisation of the air quality impact of freight deliveries to and from Heathrow is a key objective of the West London Freight Quality Partnership (WLFQP).	Ongoing.	Freight deliveries are addressed via the BAA Clean Vehicle Programme and the Freight Consolidation Centre on-airport. Expansion of the airport would increase movements and so this issue must be kept under consideration.

	Action	Progress	Further information
4.22	Assess the use of bus priority, guided buses and high occupancy vehicle lanes in the Heathrow area.	Ongoing.	Hillingdon continues to lobby for similar opportunities to be adopted. It is notable that the priority bus lane on the M4 has been discontinued over the course of the AQAP. Hard shoulder running proposed by Highways England, which will bring traffic closer to residential properties, as well as increasing traffic volumes.
4.23	Assess the feasibility of a Park and Ride scheme specifically for Heathrow.	Ongoing.	The Council has lobbied on this issue, but it has not been taken up by the airport operator.
4.24	Assess the health impact of Heathrow Airport and associated activities.	In progress. This issue has been recognised by the Hillingdon Health and Wellbeing Board.	Hillingdon has sought to engage with the Airports Commission for a thorough health impact assessment to be undertaken in the context of the 3rd Runway proposal. This request has not been taken up.
4.25	Lobby Central Government to pursue more stringent emission standards for plant, aircraft and airside vehicles.	Ongoing.	
4.26	Explore feasibility of reducing fares on the Heathrow Express.	Ongoing.	Initially concluded that this is not a possibility under the current economic climate. To be led by the airport but may be considered if expansion is given the go-ahead.
4.27	Pursue relevant organisations to prioritise public transport provision to Heathrow, particularly rail links to the west, east and south.	Ongoing.	Hillingdon continues to lobby for improved public transport access to Heathrow, with some success.
4.28	Explore feasibility of an airport passenger tax, ring-fenced for increased public transport.	Completed.	Not adopted, but Hillingdon will continue to lobby if opportunity arises.

5. Measures Concerning Local Industries and Other Businesses

5.01	Support opportunities for Combined Heat and Power where appropriate within the Borough.	Ongoing.	Biomass use is discouraged because of its AQ impact, though Hillingdon now has a framework in place whereby schemes can be assessed for air quality impact, providing developers with the certainty that they need with respect to planning requirements when making applications.
5.02	Introduce (within reason) progressively stricter conditions on Part A processes, including incineration processes, especially when located within high exceedence areas or where the impact is predicted to be within high exceedence areas.	Ongoing.	Additional monitoring in place near specific sites. Heathrow Air Quality Strategy 2011-2010 Action 2.20 commits to conducting a best available techniques analysis for all major boiler plant, and then to seek funding for application, as appropriate, on a 'suitable timescale'.

	Action	Progress	Further information
5.03	Work with the Environment Agency to improve public dissemination of industrial pollutant emissions data and other relevant information, for example on performance against permit conditions.	Completed.	
5.04	Discourage the use of bonfires on all industrial sites.	Completed.	Use of Best Practice Guidance advised on all relevant planning applications
5.05	Adopt best practice strategy for all proposed demolition and development projects. This will include the use of low emission vehicles and equipment and the use of dust minimisation techniques.	Completed.	Use of Best Practice Guidance advised on all relevant planning applications
5.06	Ensure continued regulation of part B processes and maintenance of part B register. Ensure register is available on-line.	Ongoing. In response to odour complaints about road-stone works in the Borough, odour control works have been undertaken and improvements are expected.	All inspections carried out by external contractors, reports given to LA and all information available via specialised website including online application.
5.07	Investigate introduction of Air Quality Action Plans for local industries, including those currently un-regulated under EA.	Completed.	Current resources do not permit this to extend beyond statutory actions.
5.08	Consider introduction of Environmental Award system for local industries and businesses.	Stopped.	Concluded that benefits of this measure would not be justified by resource demanded.
5.09	Encourage businesses to participate in environmental management schemes and to continue to improve environmental performance.	In progress. In the reporting year, improvements to Northwood Hills Town Centre and Hayes Town Centre have included extensive tree planting schemes along the road corridors. There is a current consideration for the inclusion of the use of green infrastructure for improving air quality and protect sensitive receptors from sources of emissions to be included as an objective within landscaping planning conditions.	Original idea for this measure has been adapted over time to make better use of the planning system, e.g. via S106 agreements.

6. Improving Eco-efficiency of current and future developments, including Council properties

6.01	Provide a consolidated platform for advising businesses and the public of the risks of air pollution, ways of reducing pollution, and campaigns such as Bike to Work Week, combining information from various Council departments and	Ongoing.	Over the life course of the AQAP, advice has been provided by various means, including via AirText, Green Roadshow, Go Green event. Public Health teams are integrated into the Council's actions.

	Action	Progress	Further information
	other bodies.		
6.02	Work with existing buildings and housing stock to secure improvements in emissions.	Ongoing. Energy efficiency awareness campaigns are underway for local residents. Establishment of the Green Doctor scheme in Hillingdon	Ongoing campaign to promote energy efficiency via several events throughout the year
6.03	Ensure continued use of existing mechanisms such as Section 106 agreements for improvements in air quality.	Ongoing. S106 Agreements continue to be used.	
6.04	Review and update Air Quality Supplementary Planning Guidance when appropriate.	Ongoing.	Materials revised as and when appropriate. Hillingdon will use the new Mayor's template to update the current Hillingdon AQSPG.
6.05	Quantify cumulative effects of new developments within AQMA.	Ongoing.	Local Plan 2 is considering cumulative impact for Hayes Town Centre of transport.
6.06	Develop supplementary planning guidance for sustainable design and construction.	Completed. In a further development to the original intention of this measure, the Council is working on the use of green infrastructure at a number of sites across the Borough, including a nursery in Uxbridge that is located in an area of poor air quality.	
6.07	Raise awareness of sustainable waste management practices.	Completed.	
6.08	Development of West London Air Quality SPD to ensure consistency across Borough boundaries, explore opportunities for joint Section 106 agreements.	Stopped.	Detailed analysis once the AQAP was in place concluded that the benefits of this measure were too limited for the measure to be taken forward.

7. Actions to be Taken Corporately, Regionally and in Liaison with the Mayor

7.01	Ensure that the London Development Framework, Borough Transport Strategy the Community Plan and future corporate strategies incorporate the Borough air quality action plan and local air quality strategy measures where appropriate.	Ongoing. The Local Plan Part 2 has been through the process of public consultation and is now awaiting examination in public. Account is taken of the need to improve air quality.	Policies are regularly checked, as they are published for consultation or in final form, for consistency with the borough's AQAP.
7.02	Develop an environmental management system for Hillingdon Borough Council.	Not started	

	Action	Progress	Further information
7.03	Establish an Environment Coordination Office for more effective integration of actions to improve environmental performance within and outside the Council.	Complete.	Alternative approach being followed for this measure, with good coordination between (e.g.) air quality, climate and transport, planning officers.
7.04	Implement an integrated procurement strategy so that purchase of goods and services is evaluated against London sustainability targets. This to include support to environmental industries in London, where appropriate.	Ongoing. In reporting year, electric vehicle purchased for project and events team.	Procurement policy for fleet vehicles in place. Requirement for relevant Green Spaces contractors to use electric vehicles.
7.05	Provide air quality information to interested parties and link with other health initiatives.	Ongoing. The Hillingdon Public Health team is currently scoping a respiratory needs assessment across the Borough, to include air quality.	AirText regularly promoted at events around the Borough, residents and businesses kept informed of developments on air quality.
7.06	Work with the London Sustainable Distribution Partnership to implement infrastructure for effective and integrated distribution of goods in London.	Stopped.	Initial assessment revealed this to be low priority for Hillingdon.
7.07	Work in partnership to ensure consistency of Action Plan measures and explore all opportunities for regional measures for reducing emissions.	Ongoing. 10 publicly available charging points installed and maintained in the Borough during the reporting period.	Collaborated with GSK and Heathrow Airport on MAQF-funded study focussing on integration of employment opportunities with key transport hubs.
7.08	Development of regional Air Quality Strategy to tackle cross-boundary issues and include all National Air Quality Strategy pollutants, climate change etc.	Completed.	Hillingdon has liaised with GLA and with neighbouring local authorities in and outside London through the course of the Action Plan. However, the measure is superseded by TfL now looking at transport and air quality strategy in West London.
7.09	UK Government to actively support air quality improvement in Hillingdon.	Ongoing. Responded to consultation on the Draft UK Air Quality Plan in September 2015.	Hillingdon has continued to respond to all national and subnational consultations relevant to air quality in the Borough, and has also engaged with the European Commission to highlight issues faced by local authorities with airports.

8. Action Plan Management

8.01	Develop and maintain management system for implementation of the plan.	All actions in this package are ongoing, with systems fully in place to implement the AQAP.	Evidence regarding all measures listed here is provided through the data presented in this progress report, and the reports issued in previous years. Plans are in place for the revision of the AQAP in 2016/17.
8.02	Identify and secure all potential funding for Action Plan initiatives.		

	Action	Progress	Further information
8.03	Maintain, and where necessary expand, the existing air quality monitoring network.		
8.04	Review and assessment of air quality in line with Defra guidance.		
8.05	Prioritise measures, providing a schedule for implementation.		
8.06	Provide progress report to Defra on annual basis.		
8.07	Review and adapt the action plan according to opportunity and circumstance.		
8.08	Maintain consultation process to disseminate information on progress against defined targets to other stakeholders.		
8.09	Examine potential for the development of regional action plan on cross boundary issues.		

6 Planning Update and Other New Sources of Emissions

6.1 General planning issues

6.1.1 Heathrow

The Government decision on the Ending of the Cranford Agreement Planning Appeal was published on 2nd February. The Planning Inspector found for the Council in regard to the implementation of the development impacting adversely on the local air quality levels at receptors in Longford. The Inspector recommended that the mitigation proposed by the Council, i.e. £540k towards the upgrading, in terms of emission standards, of the two bus routes through Longford, should be taken forward. This was upheld by the Secretary of State. Hillingdon will work with TfL to ensure that these improvements are delivered.

6.1.2 Planning conditions

Planning conditions are being tailored to include the achievement of improvements, with particular stringency to applied within Focus Areas, for example;

- Requiring by-condition confirmation of sign up to the NRMM register;
- Requiring air quality neutral assessments for all relevant developments with a further requirement for better than air quality neutral in areas of poor air quality i.e. in Air Quality Focus Areas;
- Requiring s106 contributions towards the costs of appropriate mitigation measures including (but not limited to):
    - highway works that alleviate congestion;
    - improvement of traffic management systems to optimise traffic flow;
    - implementation of regimes that encourage modal shift to less polluting modes of transport;
    - specific measures which will reduce pollution emissions, for instance encouragement of use of Low Emission Vehicles; and
    - specific measures to be incorporated to protect existing receptors, for example, but not restricted to, the use of green infrastructure at relevant locations.

6.2 Specific planning applications

Table L1 provides a summary of planning applications examined in the reporting year, as required by the GLA. More detailed information on applications is given in Table L2.

Table L1. Summary of air quality status of planning applications in the reporting year.

Condition	**Number** ***(May 2016 to March 2017)***
Planning applications reviewed for air quality impacts	28
Planning applications required to monitor for construction dust	0
CHPs/Biomass boilers refused on air quality grounds	0
CHPs/Biomass boilers subject to GLA emissions limits and/or other restrictions to reduce emissions	22
Developments where emissions from individual or communal gas boilers are subject to emissions limits or Ultra Low NOx boilers are required	17
AQ Neutral building assessments undertaken	18
AQ Neutral building assessments not meeting the benchmark and so required to include additional mitigation	3
AQ Neutral transport assessments undertaken	19
AQ Neutral transport assessments not meeting the benchmark and so required to include additional mitigation	5
Planning applications where NRMM used is required to meet the Stage IIIB of the Directive	12
Planning applications where NRMM used is required to meet the Stage IIIA of the Directive	1
Planning applications with S106 agreements including other requirements to improve air quality	18
Planning applications with CIL payments that include a contribution to improve air quality	0

Table L2. Details of planning applications summarised in Table L1.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
Planning Ref	**41309/APP/2016/3391**		
RANDALLS 7-9 VINE STREET UXBRIDGE Change of use of the ground and part first floor of the Randalls building from Use Class A1 to a flexible use within Classes A1/A2/A3, B1 and D1/D2; conversion of part of the first floor from Use Class A1 to Use Class C3 (residential); addition of a second storey roof top extension to provide residential apartments (Use Class C3) and external restoration works; the erection of three new residential blocks (Use Class C3) ranging from 3 to 6 storeys in height, a new ground floor retail unit (Use Class A1), conversion of the Old Fire Station Building to duplex apartments (Use Class C3); the provision of associated landscaping, car parking and associated works, to provided 59 residential units in total and 750.2sqm of commercial floorspace, involving the demolition of the 1960's extension to the Randalls building, caretakers flat and warehouse buildings (full planning permission).	The Application Site falls within the AQMA and Uxbridge Focus Area 1) the report is of great quality and detail and follows good technical applications; 2) however, unfortunately, it was not conservative enough as per current practice which does not decline emissions overtime - it has considered the clean fleet emissions in the opening year of 2021 with the current EFT V7 fleet composition projections. Whereat it was adjusted for Euro 6 emissions with CURE it did assume an extreme optimistic euro fleet penetration in 2021 (it assumed a lot more Euro 6 cars in the fleet than it is likely to be the case) 3) also, it did only look at the impact on new residential locations, did not consider the impact of the additional vehicles associated with the residential use of the site onto the overall network so we don't know what that impact might be. 4) there is a car park being proposed - no modelling of emissions was undertaken. It is not so much the impact in the immediate vicinity of the site	Therefore, the LA will need a condition to be applied that requires that a low emission strategy is produced so that: a) there are enough incentives for the use of ultra-low emission vehicles by the residents. This will include the requirement of electric charging points as per minimum requirements; b) there was no assessment of the impact on local air quality of the energy centre likely to be associated with the site. In the instance there is one, these will have to be low NOx as per GLA's Supplementary Planning Guidance on Sustainable Design and Construction. In addition, the LA will apply more stringent conditions as the application site falls within a Focus Area	**LES/AQAP CONDITION** **(this should be communicated at design / pre app stage)** Prior to the commencement of development, a **Low Emission Strategy**, with associated **Air Quality Action Plan**, demonstrating the management, control and significant reduction of NO_2, PM_{10} and $PM_{2.5}$ shall be submitted to and approved in writing by the Local Planning Authority. The strategy shall identify all sources of emissions associated with the proposal and the measures and technology to reduce and manage them. In addition, the strategy shall **quantify** the reductions estimated for each measure. The action plan will aim to implement the strategy and will indicate how and when the measures will be implemented and how their effectiveness is quantified. The measures shall include but not limited to: **Vehicular Traffic** a) Setting targets for and incentivising the use of Euro V and Euro VI HGVs b) Setting targets for and incentivising the use of Euro 5 and Euro 6 non HGVs c) Installation of electric charging points d) Active promotion of cleaner vehicle technologies for all users of the development e) Active promotion of no idling **Technology** Use of low emission boilers that comply with the GLA Sustainable Design and Construction SPD **Emissions** The action plan must include forecasts for the emissions associated with the development and set annual reduction targets. **Monitoring**

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
	that is of concern, but the additional burden on the nearby busy roundabouts and congested areas where the impacts were not assessed.		The action plan must include details for monitoring the vehicular types and recording the percentage of Euro V/5 and Euro VI/6 vehicles as well as progress against the emission reduction targets. **Reporting** The action plan must include details for reporting the results of the monitoring to the Local Authority. **REASON** To ensure the development reduces and manages its air quality impacts in an area that currently exceeds minimum EU limit values for health and in line with Policy EM8 of the Local Plan and 7.14 of the London Plan. **NRMM CONDITION** All Non Road Mobile Machinery (NRMM) must meet meet Stage IIIA criteria of EU Directive 97/68/EC and registered online on the NRMM website at http://nrmm.london/. **REASON** To ensure the development complies with Policy EM8 of the Hillingdon Local Plan: Part 1, Policy 7.14 of the London Plan (2016) and paragraph 124 of the National Planning Policy Framework.
Planning Ref	**26134/APP/2016/1987**		
FANUC HOUSE 1 STATION APPROACH RUISLIP Demolition of existing office building and re-development of the site to provide a 4 storey building with roof top amenity garden and basement parking comprising 41 residential units with associated car parking, amenity space and landscaping.	The application site falls within Ruislip Town Centre Focus Area The air quality report supporting the planning application offers mitigation. The mitigation recommended is appropriate and is required as a condition.	The requirements are as follow: 1) mechanical ventilation - mechanical ventilation with suitable NOx/NO_2 filters is required for all residential units of the proposed development at specific locations.	**MECHANICAL VENTILATION CONDITION** No development shall commence until the design of the mechanical ventilation is approved in writing by the local authority. The mechanical ventilation is required for all residential units of the proposed development at the ground and first-floor levels, as well as those close to Pembroke Road at the second-floor level. Inlets for the ventilation should draw in clean air from the third-floor or higher, where nitrogen dioxide concentrations will be below the annual mean objective. Alternatively, inlets may be located at the ground to second-floor levels if the air is cleaned using NOx filtration to ensure that the occupants will receive clean air with annual mean

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
		2) number of electric car parking spaces as per current guidance	nitrogen dioxide concentrations below 40 µg/m^3 (below the objective). Care should be taken to locate the inlets away from any other sources of pollution, such as the Energy Centre exhaust flue and kitchen extracts. **NRMM CONDITION** All Non Road Mobile Machinery (NRMM) must meet meet Stage IIIA criteria of EU Directive 97/68/EC and registered online on the NRMM website at http://nrmm.london/. **REASON** To ensure the development complies with Policy EM8 of the Hillingdon Local Plan: Part 1, Policy 7.14 of the London Plan (2016) and paragraph 124 of the National Planning Policy Framework. **LES/AQAP CONDITION** (this should be communicated at design / pre app stage) Prior to the commencement of development, a Low Emission Strategy, with associated Air Quality Action Plan, demonstrating the management, control and significant reduction of NO_2, PM_{10} and $PM_{2.5}$ shall be submitted to and approved in writing by the Local Planning Authority. The strategy shall identify all sources of emissions associated with the proposal and the measures and technology to reduce and manage them. In addition, the strategy shall quantify the reductions estimated for each measure. The action plan will aim to implement the strategy and will indicate how and when the measures will be implemented and how their effectiveness is quantified. The measures shall include but not limited to: **Vehicular Traffic** a) Setting targets for and incentivising the use of Euro V and Euro VI HGVs b) Setting targets for and incentivising the use of Euro 5 and Euro 6 non HGVs c) Installation of electric charging points d) Active promotion of cleaner vehicle technologies for all

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
			users of the development e) Active promotion of no idling **Technology** Use of low emission boilers that comply with the GLA Sustainable Design and Construction SPD **Emissions** The action plan must include forecasts for the emissions associated with the development and set annual reduction targets. **Monitoring** The action plan must include details for monitoring the vehicular types and recording the percentage of Euro V/5 and Euro VI/6 vehicles as well as progress against the emission reduction targets. **Reporting** The action plan must include details for reporting the results of the monitoring to the Local Authority. REASON To ensure the development reduces and manages its air quality impacts in an area that currently exceeds minimum EU limit values for health and in line with Policy EM8 of the Local Plan and 7.14 of the London Plan.
Planning Ref	**8057/APP/2016/3671**		
The former Star PH, corner of Star Road and UXBRIDGE ROAD HILLINGDON - UB10 0LZ Erection of part 2, part 3 and part 4 storey building containing 15 residential units, a commercial unit at ground floor level with associated	Falls within the Uxbridge Rd Focus Area Air Quality assessment undertaken in 2014, therefore baseline values for 2013 – outdated Emission factors and background values outdated	Therefore mitigation of exposure is required for both current and new residents in the application area which is to be secured via planning conditions	**MECHANICAL VENTILATION CONDITION** No development shall commence until the design of the mechanical ventilation is approved in writing by the local authority. The mechanical ventilation is required for all residential units of the proposed development at the ground and first-floor levels. Inlets may only be located at the ground to second-floor levels if the air is cleaned using NOx filtration to ensure that the occupants will receive clean air with annual mean nitrogen dioxide concentrations below 40 $\mu g/m^3$ (below the objective). Care should be taken to locate the inlets away

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
ground floor parking, access and landscaping.	Just one monitoring location used so no indication of the uncertainty of the model Modelling results judged to be underestimating exposure at application location – according to GLA most recent LAEI (March 2016) the application site is within a location likely to be above NO_2 annual limit value. In addition, no impact on current air quality conditions has been presented as part of the assessment. The use of the DMRB criteria is not applicable to local air quality management, especially in areas already above limit value. Therefore, the air quality assessment is incomplete.		from any other sources of pollution, such as the Energy Centre exhaust flue and kitchen extracts. **LES/AQAP CONDITION** **(this should be communicated at design / pre app stage)** Prior to the commencement of development, a **Low Emission Strategy**, with associated **Air Quality Action Plan**, demonstrating the management, control and significant reduction of NO_2, PM_{10} and $PM_{2.5}$ shall be submitted to and approved in writing by the Local Planning Authority. The strategy shall identify all sources of emissions associated with the proposal and the measures and technology to reduce and manage them. In addition, the strategy shall **quantify** the reductions estimated for each measure. The action plan will aim to implement the strategy and will indicate how and when the measures will be implemented and how their effectiveness is quantified. The measures shall include but not limited to: **Vehicular Traffic** a) Setting targets for and incentivising the use of Euro V and Euro VI HGVs b) Setting targets for and incentivising the use of Euro 5 and Euro 6 non HGVs c) Installation of electric charging points d) Active promotion of cleaner vehicle technologies for all users of the development e) Active promotion of no idling **Technology** Use of low emission boilers that comply with the GLA Sustainable Design and Construction SPD **Emissions** The action plan must include forecasts for the emissions associated with the development and set annual reduction targets. **Monitoring** The action plan must include details for monitoring the vehicular

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
			types and recording the percentage of Euro V/5 and Euro VI/6 vehicles as well as progress against the emission reduction targets. **Reporting** The action plan must include details for reporting the results of the monitoring to the Local Authority. **REASON** To ensure the development reduces and manages its air quality impacts in an area that currently exceeds minimum EU limit values for health and in line with Policy EM8 of the Local Plan and 7.14 of the London Plan. **NRMM CONDITION** All Non Road Mobile Machinery (NRMM) must meet meet Stage IIIA criteria of EU Directive 97/68/EC and registered online on the NRMM website at http://nrmm.london/. **REASON** To ensure the development complies with Policy EM8 of the Hillingdon Local Plan: Part 1, Policy 7.14 of the London Plan (2016) and paragraph 124 of the National Planning Policy Framework.
Planning Ref	**18505/APP/2016/3534**		
ABROOK ARMS PH HAREFIELD ROAD UXBRIDGE - Demolition of the existing public house and erection of a new building comprising 18 residential units and a basement car park.	Still mention to DMRB! (DMRB is not suitable for local air quality management purposes especially in areas close to or already in exceedance – it is a Highways England simplistic screening tool to determine the need for a detailed assessment for large motorway schemes – not suitable at all for planning applications!) Did not assess the impact on existing locations which will be	Therefore we will need to ask S106 contribution to remove the impacts on air quality at the two congested locations mentioned	No conditions, section 106 contribution to contribute towards reduction of emissions

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
	impacted by the scheme namely the junctions: Harefield road/Western Av/Swakeleys roundabout and Uxbridge roundabout/Oxford rd /Harefield rd		
Planning Ref	**1279/APP/2016/3827**		
BAY C, UNIT B IVER LANE COWLEY UB8 2JG Installation of a Biomass boiler system with associated compressor, silo, flue and cladding	There is no air dispersion modelling undertaken to support this planning application. As it is for a biomass application we require that one is submitted as there are residential locations downwind less than 200m of the proposed installation	Require a dispersion modelling exercise to ascertain levels of both NO_2 and PM_{10} and $PM_{2,5}$ at residential locations using ADMS or alike to take into consideration the 3D nature of the infrastructures nearby. This modelling exercise is to include a stack height determination by means of sensitive analyses using the same model. Appropriate additional mitigation for air quality impacts of biomass could include: increasing stack height, repositioning the stack, alternative fuels or selection of cleaner plant.	**AIR DISPERSION MODELLING CONDITION** (a) No development shall commence until an Air Quality Assessment has been submitted to and approved in writing by the local planning authority. (b) The Air Quality Assessment will need to utilise an appropriate air quality model and emissions assessment tool to predict air quality concentrations at agreed receptor locations. Data should be presented for the first year of operation as 'with development' and 'without development' to allow comparisons to be made. c) Details of arrangements for the supply and storage of fuel and maintenance of the furnace must be included. Air Quality modelling should consider variable emissions rates associated with the biomass boiler operating on full and partial load and be carried out in accordance with the procedures outlined in Air Quality and Planning guidance, London Councils (2007) and Technical Guidance Note TG (16). The Council's Environmental Health service will consider the information submitted in accordance with the above to determine whether the biomass furnace is acceptable and whether any additional mitigation technologies will be required. The Council may use Section 106 obligations to set requirements for controlling emissions from biomass boilers.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
			d) a Neutral Assessment should also be included. Reason: In order that the local planning authority may be satisfied that the development is not going to result in significant health impacts to existing and future residents from a deterioration in local air quality.
Planning Ref	**71374/APP/2016/4027**		
SILVERDALE INDUSTRIAL ESTATE SILVERDALE ROAD HAYES UB3 3BL Demolition of existing buildings and redevelopment of the site to provide a podium at ground level and buildings ranging from ground plus three storeys to eight storeys, comprising 124 residential units (Use Class C3) and 227 sqm of flexible commercial space (Use Classes A1, A3, B1, D1 or D2), together with associated car parking, vehicular access, landscaping, infrastructure works and the extension of Shackles Dock. Case Officer Richard Conroy	It is not possible to ascertain where the impact assessment locations were considered nor the extent of the road network considered in the assessment which is key as the proposed development is within a Focus Area. Whereas it is unlikely to expose new residents to exceeding concentrations, it is highly likely that the development will have a significant impact at locations within the focus area where levels are well above the limit value. In addition, the air quality neutral assessment concludes that the proposed redevelopment is likely to result on transport emissions higher than the benchmarked values which will require offsetting.	**Traffic emissions** Will require that the AQA demonstrates that the predicted traffic impact increase associated with the proposed development AT AGREED LOCATIONS is unlikely to result on a detrimental pollution on locations of relevant exposure. **Energy Strategy** Any operational plant effects should be assessed, if required, at the appropriate stage, when all the required detailed plant technical information is available. Compliance to relevant regulations and standards should be secured through planning conditions. Air Quality Neutral Assessment	Contrary to what the assessment indicates, mitigation measures will be required for traffic. We will require S106 value calculated on total emissions, not net emissions. In addition, we will need a Low Emission Strategy secured via condition. **LES/AQAP CONDITION** **(this should be communicated at design / pre app stage)** Prior to the commencement of development, a **Low Emission Strategy**, with associated **Air Quality Action Plan**, demonstrating the management, control and significant reduction of NO_2, PM_{10} and $PM_{2.5}$ shall be submitted to and approved in writing by the Local Planning Authority. The strategy shall identify all sources of emissions associated with the proposal and the measures and technology to reduce and manage them. In addition, the strategy shall **quantify** the reductions estimated for each measure. The action plan will aim to implement the strategy and will indicate how and when the measures will be implemented and how their effectiveness is quantified. The measures shall include but not limited to: **Vehicular Traffic** a) Setting targets for and incentivising the use of Euro V

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
		Details of suitable offsetting on-site or off-site, should be secured, at this stage, though a suitable planning condition. However, we don't have enough information to ascertain off site offsetting requirements as we don't know where the offsite impacts were assessed. The worst case location based on distance is (as per report 5m from kerbside) is not suffice – need to know WHERE.	and Euro VI HGVs b) Setting targets for and incentivising the use of Euro 5 and Euro 6 non HGVs c) Installation of electric charging points d) Active promotion of cleaner vehicle technologies for all users of the development e) Active promotion of no idling **Technology** Use of low emission boilers that comply with the GLA Sustainable Design and Construction SPD **Emissions** The action plan must include forecasts for the emissions associated with the development and set annual reduction targets. **Monitoring** The action plan must include details for monitoring the vehicular types and recording the percentage of Euro V/5 and Euro VI/6 vehicles as well as progress against the emission reduction targets. **Reporting** The action plan must include details for reporting the results of the monitoring to the Local Authority. **REASON** To ensure the development reduces and manages its air quality impacts in an area that currently exceeds minimum EU limit values for health and in line with Policy EM8 of the Local Plan and 7.14 of the London Plan.
Planning Ref	**1724/APP/2016/3513**		
ONSLOW MILLS TROUT ROAD YIEWSLEY Demolition of existing building and erection of new building	The air quality assessment has not fully assessed the neutrality of the scheme. Whereas dispersion modelling was not undertaken for traffic emissions due to reduction in traffic from	Undertake neutral assessment for traffic emissions and submit as an addendum to the air quality report.	No planning conditions required at this point subject to traffic emission assessment results.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
comprising 24 apartments, amenity space and car parking.	previous use traffic emissions need to be assessed under the neutral assessment		
Planning Ref	**43159/APP/2016/4042**		
Plots 21-29, Numbers 33-41 Royal Quay Harefield UB9 6FG Details of air quality monitoring for Plots 21 - 29 (odds) in part compliance with condition 27 of planning permission ref: 43159/APP/2013/1094 dated 30/10/2013 (residential development).	The information received/in the system regarding the asbestos report indicates NADIS (No Asbestos Detected In) status at every sample which is good news.		Condition DISCHARGED Prior to the occupation of each phase of the development a suitable scheme to monitor indoor air for asbestos including measures to remediate exceedances shall be submitted and approved in writing by the LPA. The scheme and remediation measures shall be implemented as agreed and verification information to demonstrate indoor air quality is suitable for use shall be submitted to the satisfaction of the LPA unless the LPA dispenses with any such requirement for each phase, specifically and in writing. REASON To protect future occupiers of the development in accordance with policy OE11 of the Hillingdon Local Plan: Part Two Saved UDP Policies (November 2012).
Planning Ref	**11332/APP/2016/1595**		
FORMER BRITISH LEGION STATION ROAD WEST DRAYTON Erection of 13 terrace dwelling houses with associated parking, landscaping and external works, following demolition of existing building	The application site is within a Focus Area (West Drayton / Yiesley) close to areas exceeding the limit value for NO2. No Air Quality Assessment was submitted to support the planning application	Therefore an Air Quality Assessment is required in order to proceed.	Awaiting document.
Planning Ref	**59872/APP/2016/3454**		
	We cannot accept the results of	We will need them to prove	Awaiting documentation.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
THE MACHINE STORE & PRESSING PLANT, THE OLD VINYL FACTORY BLYTH ROAD HAYES UB3 1SY Mixed use redevelopment of the Pressing Plant, at The Old Vinyl Factory site, including the partial demolition of the Pressing Plant (formerly Apollo House), retention of front facade and part of the western facade of the Pressing Plant and construction of a 3 screen cinema, with retail, bar, restaurant and exhibition spaces and construction of the Machine Store, comprising 81 residential units, a health centre, bars/cafes, associated parking, landscaping, and access works. (AMENDED PLANS - Increased scale of Health Centre provision plus 1 no. additional residential unit)	the air quality report as they used an unsuitable background value. Because of the background used, the changes associated with transport are minimal which is incorrect. This is a stand-alone application so any previous S106 agreements would not apply	that there have been no material changes in relation to the previous consented used under the master plan. If a material change has occurred, we cannot accept their previous S106 agreement. We need a proper assessment of the traffic impact on relevant exposure (existing and new), using a conservative approach to be agreed with the council. the level of mitigation being offered is not suitable, in the light of the expected levels of exposure associated with the application site, namely the full cumulative impacts of the master plan which have not been assessed suitably.	Requires updating of S106 contribution as it is a stand alone application.
Planning Ref	**12768/APP/2016/1580**		
FORMER WEST DRAYTON POLICE STATION, STATION ROAD WEST DRAYTON PROPOSAL: Residential development of 53 units, comprising 13 houses and 40 flats, together with associated parking, access road and landscaping, involving the part retention of the listed walls and demolition of the existing Police Station, outbuildings and concrete	The air quality is not neutral for transport emissions. The Transport Emissions are greater than the benchmarks for both NOx and PM10, by 108.4 and 18.6 kg/yr respectively.	The proposed development is not considered air quality neutral in terms of transport emissions and therefore contribution via S106 is required based on total transport emissions	Undecided. Requirement of S106 contribution

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
hard standings.			
Planning Ref	1279/APP/2016/3827		
BAY C, UNIT B IVER LANE COWLEY UB8 2JG Installation of a Biomass boiler system with associated compressor, silo, flue and cladding.	This biomass unit is replacing a much more polluting unit which is to be discontinued	Good communication thread with applicant engineer for full understanding of the new installation. The application was thoroughly analysed the and details discussed with the applicant. In the light of the information provided and discussed, since it is to replace a very old and a lot more polluting unit, it is OK to proceed. However, the following condition will have to be discharged before the 30th March 2018. This is to give a 12-month period to monitor stack emissions and undertake advanced dispersion modelling at sensitive receptors locations to be agreed with Hillingdon with real data.	**Air Quality Impact condition** A full air quality assessment report is to be produced and submitted to the LA by the 30th of March 2018 which will report the following a) real stack emissions representative of worst case conditions over the period 30th March 2017 to 30th March 2018 b) baseline conditions characterised for 2017 before the unit is in operation c) exposure assessment for Total NO2, PM10, and PM2.5 concentrations at receptor locations to be agreed with Hillingdon using advanced dispersion modelling with real emissions after the unit is in operation d) should the unit increase ambient air concentrations of the pollutants listed above, mitigation measures and or financial contribution to reduce Pollution levels in the area will be agreed with Hillingdon prior to the discharge of this condition. Reason: to align with Hillingdon Local Action Plan and safeguard human health
Planning Ref	**59872/APP/2016/3350**		
THE OLD VINYL FACTORY SITE BLYTH ROAD HAYES UB3 1RY Details pursuant to the partial discharge of Condition 12 (Air Quality - Emissions from Energy Provision) in relation to Phase 4 (The Power House) of planning permission	In order to discharge condition 12 we will require that mitigation is applied to remove the slight adverse impacts predicted at receptors: A) E11 - Existing Receptor located at Enterprise House - as it is and existing receptor, increasing the height of the stack may need to be	Therefore the LA cannot discharge the condition until proof that actions A) and B) have been suitably considered.	Proof that the best available technology was requested by the Local Authority and received. The council discharged the condition purely on this basis. The council did not accept the premise that design measures to reduce emissions were to be considered mitigation measures – these are totally distinct – there was some confusion from the applicant's side on this. The Local Authority advised the applicant to consult on acceptability of mitigation measures prior to implementation.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
ref. 59872/APP/2013/3775 (Variation of Condition 4 (Phasing) of planning permission ref. 59872/APP/2012/1838 dated 19/04/2013, to allow variations to phasing of approved development to allow the Boilerhouse and the Material Store to come forward as Phases 1 and 2, and to allow the Veneer Store and/or Record Stack car parks to come forward earlier than in the approved phasing).	considered to remove the adverse effect. If not possible, a catalytic converter is to be applied to remove emissions at source and hence the impact at existing receptor locations. B) proposed P9, P10, and P14 receptors. Please note that P14 is particularly sensitive as it is a student's location. At these proposed locations mechanical ventilation is required with appropriate NOx filters with a NOx/NO2 removal efficiency above 95%. Reason - the proposed development falls within Hillingdon's Hayes Focus area and therefore slight adverse impacts need to be removed.		
Planning Ref	**585/APP/2016/4506**		
ST ANDREW'S PARK HILLINGDON ROAD UXBRIDGE Details pursuant to the partial discharge of Condition 54 (Air Pollution Mitigation) for Phase 4 of planning permission ref. 585/APP/2015/848 (Variation of condition 5 of planning permission ref: 585/APP/2009/2752 dated 18/01/2012 (redevelopment of former RAF Uxbridge site) to amend approved plans and drainage strategy regarding	No information to evaluate whether there are appropriate NOx filters to remove pollution. The word minimising used in the txt of the report submitted is not good enough and if suitable NOx filters are not implemented with a removal efficiency rate higher than 95% we will be ventilating polluted air into the new residences and hence exacerbation of exposure to hazardous levels (at indoor locations in addition to outdoor locations).	The LA need to see a commitment to use NOx filters, as any other type of filters will not suffice.	The applicant was asked to provide confirmation that NOx removal filters will be applied and efficiency of removal as well as that no mechanical ventilation will extract air from any point lower than the second floor and extraction will only occur from points not facing the main street.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
the Town Centre Extension phase of the development).			
Planning Ref	**2734/APP/2016/4592**		
SITE OF FORMER BLUE ANCHOR PH PRINTING HOUSE LANE HAYES Redevelopment of vacant site to provide a part 2, part 3 and part 4 storey building comprising 1,444 sq.m B1 office floorspace, associated parking together with hard and soft landscaping.	Whereas new exposure receptors will be below limit values, the proposed development is within a Focus Area. Within Focus Areas, due to the need to reduce emissions, cumulative assessment of several small contributions need to be assessed and minimised. According to current guidance, the assessment is considered neutral but is not suffice to reduce emissions	The assessment is more stringent to account for a zero emissions approach as opposed to a "neutral" approach where comparison is made to a benchmark which in reality allows emissions to occur and in any shape of form offers a reduction in overall emissions when considering cumulative with other smaller (or larger) developments	undecided
Planning Ref	**12156/APP/2016/4647**		
FASSNIDGE MEMORIAL HALL - R/O HIGH STREET UXBRIDGE UB8 1JP Erection of part 4, part 7 and part 9 storey building to provide a replacement community dining facility and 87 self-contained residential units with associated undercroft car and cycle parking, new vehicle access point, communal and private amenity areas, and landscaping, following demolition of existing Fassnidge community dining hall and garage.	Application site Falls in AQMA and Focus Area No consultation undertaken with the Local Authority No Air Quality Neutral Assessment for buildings as per current requirements A list of mitigation options is included in the Air Quality Assessment but it is not clear what will be actually implemented nor what is actually needed as no impact assessment was undertaken	Without relevant information it is difficult to establish requirements – need to ask the applicant to establish the levels new residents will be exposed to and what mitigation measures are actually required.	Requested suitable information to support the planning application in terms of air quality. Undecided
Planning Ref	**71582/APP/2016/4582**		
	Effects during Operation	The proposed development	S106 Agreement required to account for operation emissions

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
LAND REAR OF 2-24 HORTON ROAD YIEWSLEY Demolition of existing buildings and redevelopment to provide 86 residential units in three buildings of 4-6 storeys with private balconies together with one three-bed dwelling, A1/A2 or A3 unit, associated car parking at basement and surface level, cycle parking, communal amenity areas, landscaping, improved access, and relocated sub-station	Effects from additional traffic movements associated with the operation of the proposed development to local air quality are not considered significant and therefore mitigation is not required. Gas fired boilers and solar PV are proposed for the development. The building emissions of the proposed development have complied with the air quality neutral policy. However, ultra-low NOx boilers with NOx emissions of less than 40 mg/kWh must be used, in accordance with the London Plan. The applicant has only assessed the impact at receptors within 200m of the proposed development and we need to account for the pressures on the operation traffic in the nearby Focus Area (Yiesley).	is within a Focus Area and therefore need to make sure the proposed development contributes to the reduction of NOx emissions in the area.	This value is calculated on the basis of 3 years of operation and has not taken into account construction emissions.
Planning Ref	**11981/APP/2016/4626**		
FORMER ANGLERS RETREAT PH CRICKETFIELD ROAD WEST DRAYTON Demolition of existing former public house building and erection of a two storey building comprising of two residential flats, car and cycle parking and associated works.	Baseline outdated as it refers to 2012 data. The M25 and M4 motorways and the motorway roundabout junction, which are likely to have elevated concentrations of NO2 and PM10 due to emissions from road traffic, are more than 500m away from the development. No neutral Assessment undertaken for transport – does not align with Mayor	If the proposed development is to include any large-scale emission sources such as biomass plant or CHP, then these will require further assessment.	A S106 agreement is required based on total emissions including construction.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
	requirements However small and outside Focus area There are no proposed biomass combustion or Combined Heat and Power (CHP), currently included in the design		
Planning Ref	**829/APP/2016/3167**		
FORMER ROYAL BRITISH LEGION CLUB SIPSON ROAD WEST DRAYTON Redevelopment of the site to accommodate a 7 storey 108 room hotel incorporating breakfast area and working/living zone at ground floor level; a basement level with associated parking; and external landscaping works including provision of parking, servicing areas, and planting.	No neutral assessment is supplied to support the planning application Significance criteria applied outdated Results not in line with the LAEI mapping Results of report not complete as do not fully assess the impact within Focus Area	Need neutral assessment and energy centre calculations	Required a S106 contribution to remove NOx emissions from the area
Planning Ref	**12156/APP/2017/261**		
FASSNIDGE MEMORIAL HALL - R/O HIGH STREET UXBRIDGE UB8 1JP Submission of details pursuant to conditions 19 (Air Pollution) and 20 (Energy Provision) of planning permission ref. 12156/APP/2015/4166 dated 18-03-2016 (Demolition of existing Fassnidge Community Dining Hall and garage, and erection of part 4, part 7, part 8 storey building to provide a replacement community dining facility and	Information provided is suitable and has been accepted	No further requirements	Condition discharged

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
73 self-contained residential units with associated undercroft car and cycle parking, new vehicle access point, communal and private amenity areas, and landscaping).			
Planning Ref	**67622/APP/2017/328**		
FORMER CONTRACTOR'S COMPOUND, SOUTH OF SWINDON ROAD HEATHROW AIRPORT Submission of details pursuant to condition 15 (Air Quality) of planning permission reference 67622/APP/2015/1851 for the variation of conditions 3, 4 and 9 of application 67622/APP/2013/2532	Information provided is suitable and has been accepted	No further requirements	Condition discharged
Planning Ref	**72098/APP/2016/4123**		
UXBRIDGE ROAD HAYES UB4 0JN Change of use of Sui Generis Fiat Car showroom to Class D2 (Banqueting Hall) on ground floor level and Class A3 (Restaurant) on first floor level.	The proposed development is within a Focus Area of Ossie Garvin. The specific boilers and plant have not yet been specific for this proposed development and therefore it is not possible to determine whether the proposed boilers will be considered “air quality neutral”	Given the proposed development is expected to generate an AADT of 596 vehicle movements per day within a Focus Area, a S106 contribution is required to alleviate congestion in the areas likely to be affected by these movements.	Required S106 contribution in line with NOx emissions associated with the operational phase of the proposed development
Planning Ref	**S.106 Traffic and Air Quality Impact Study**		
Lidl at Botwell Lane Store at Botwell Lane, Hayes relates to a Traffic and Air Quality Impact Study.	Schedule 7 of or S.106 agreement for our proposed At the application stage highways had identified that highway improvements are	Setting up of a meeting with proponent to fine tune the scope of works, monitoring of progress and final outcomes	SCHEDULE 7 TRAFFIC AND AIR QUALITY IMPACT STUDY The Owner hereby covenants and agrees with the Council as follows:

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
	needed following a traffic study. Considering that reduction in congestion would improve air quality and the developer was challenging the air quality contributions, it was considered the highways obligation will have a joint title with air quality. The developer will be required to demonstrate improvements to air through the highways improvements.		1. The full scope, requirements and methodology of the Traffic and Air Quality Impact Study as mentioned in this Schedule shall first be submitted to and agreed by the Council in writing prior to Commencement of the Development. 2. Prior to Occupation of the Development, to undertake the Traffic and Air Quality Impact Study, which shall assess the overall impacts associated with the overall parking provision within the Development's car park and contribute towards the costs of appropriate mitigation measures including (but not limited to): a. highway works b. specific measures which will reduce pollution emissions; and c. specific measures to be incorporated to protect existing receptors, for example but not restricted to, the use of green infrastructure. 3. Prior to Occupation of the Development to report the findings of the Traffic and Air Quality Impact Study and identify and agree in writing with the Council the remediation measures and fully implement the agreed remediation measures (if any are required). 4. To observe and perform the remediation measures arising from the Traffic and Air Quality Study for the lifetime of the Development. 5. The Owner shall be responsible for the full costs of the Traffic and Air Quality Impact Study and any works, remediation or mitigation measures identified as necessary in said study.
Planning Ref	**24597/APP/2017/158**		
BLENHEIM BEDROOMS LTD, WATERCRESS BEDS SPRINGWELL LANE HAREFIELD WD3 8UX Installation of a biomass boiler and a lean-to housing to existing workshop.	The appliances proposed is exempt when using the specified fuel(s), when operated in accordance with the instruction and installation manuals and when any conditions are met.	Fuel Type: Wood based Appliance Type: Boiler Manufacturer: Lindner & Sommerauer, SL-Technik GmbH, Trimmelkram 113 A-5120 St Pantaleon, Austria The fireplace must be installed, maintained and	undecided

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
		operated in accordance with the Instruction manual Operating Instructions and Technical Description – Rotary Grid system SL 25T/2R TO SL 250 T6R and SL-P 30 TO SL-P 250, dated 5th March 2014, reference: 140304 ENG Permitted fuels: Wood chips and wood pellets[1] A dispersion model must be run to ascertain impacts on local residents and apply mitigation measures as and when required	
Planning Ref	**71374/APP/2016/4027/ 5886 - Silverdale Road, Hayes - Planning Re-Submission**		
SILVERDALE INDUSTRIAL ESTATE SILVERDALE ROAD HAYES UB3 3BL Demolition of existing buildings and redevelopment of the site to provide a podium at ground level and buildings ranging from four storeys to nine storeys, comprising 122 residential units (Use Class C3) and 230 sqm of flexible commercial space (Use Classes A1, A3, B1, D1 or D2), together with associated car parking, vehicular access, landscaping, infrastructure works and the extension of Shackles Dock.	It is not possible to ascertain where the impact assessment locations were considered nor the extent of the road network considered in the assessment which is key as the proposed development is within a Focus Area. Whereas it is unlikely to expose new residents to exceeding concentrations, it is highly likely that the development will have a significant impact at locations within the focus area where levels are well above the limit value. In addition the air quality neutral assessment concludes that the proposed redevelopment is likely to result on transport emissions higher than the benchmarked	**Traffic emissions** Will require that the AQA demonstrates that the predicted traffic impact increase associated with the proposed development AT AGREED LOCATIONS is unlikely to result on a detrimental pollution on locations of relevant exposure. **Energy Strategy** Any operational plant effects should be assessed, at the appropriate stage, when all the required detailed plant technical information is available. Impact Mitigation Details of suitable offsetting on-site or off-site, should be secured, at this stage,	**LES/AQAP CONDITION** (this should be communicated at design / pre app stage) Prior to the commencement of development, a Low Emission Strategy, with associated Air Quality Action Plan, demonstrating the management, control and significant reduction of NO2, PM10 and PM2.5 shall be submitted to and approved in writing by the Local Planning Authority. The strategy shall identify all sources of emissions associated with the proposal and the measures and technology to reduce and manage them. In addition, the strategy shall quantify the reductions estimated for each measure. The action plan will aim to implement the strategy and will indicate how and when the measures will be implemented and how their effectiveness is quantified. The measures shall include but not limited to: **Vehicular Traffic** a) Setting targets for and incentivising the use of Euro V and Euro VI HGVs b) Setting targets for and incentivising the use of Euro 5 and Euro 6 non HGVs c) Installation of electric charging points d) Active promotion of cleaner vehicle technologies for all users of the development

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
	values which will require offsetting.	through a suitable planning condition. However, we don't have enough information to ascertain off site offsetting requirements as we don't know where the off-site impacts were assessed. The worst case location based on distance is (as per report 5m from kerbside) is not suffice – need to know WHERE. Contrary to what the assessment indicates, mitigation measures will be required for traffic. We will require S106 value calculated on total emissions, not net emissions. In addition, we will need a Low Emission Strategy secured via condition.	e) Active promotion of no idling **Technology** Use of low emission boilers that comply with the GLA Sustainable Design and Construction SPD **Emissions** The action plan must include forecasts for the emissions associated with the development and set annual reduction targets. Monitoring The action plan must include details for monitoring the vehicular types and recording the percentage of Euro V/5 and Euro VI/6 vehicles as well as progress against the emission reduction targets. **Reporting** The action plan must include details for reporting the results of the monitoring to the Local Authority. REASON To ensure the development reduces and manages its air quality impacts in an area that currently exceeds minimum EU limit values for health and in line with Policy EM8 of the Local Plan and 7.14 of the London Plan.
Planning Ref	**54814/APP/2017/604**		
THE STRAIGHT, SOUTHALL GASWORKS SITE HAYES BY PASS HAYES UB1 1QX Variation of condition 2 of: Outline application Demolition of 22 houses; the remediation of the land and the redevelopment of the site to deliver a large mixed use development including residential, non-food retail, food retail, restaurants, bars and cafes, hotel, conference and banqueting, cinema, health care facilities,	The previous assessment found that the likely significant operational effects of the proposed development in the interim year (2019) would be significant, on the basis that there were considered to be a number of slight, moderate and substantial adverse impacts. The likely significant effects of the proposed development in the year of completion (2041) were also found to be significant, on the basis that	On the basis of the updated results, there is no change to the conclusion that the operational air quality effects, for the interim (2019) and completion (2041) assessment years, without mitigation, are judged to be significant. The judgement that the air quality effects will be significant without mitigation takes account of the assessment that the proposed development will	Requirement of S106 contribution using the NOx damage calculator for total emissions.

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
education facilities, office/studio units, sports pavilion, an energy centre, multi-storey car park and associated car and cycle parking, landscaping, public realm, open space and children's play space. Full application New access roads from the Hayes By-pass and Southall town centre to the application site for vehicle, cycle and pedestrian access, including drainage and a flood relief pond. Widening of South Road across the railway line, widening of South Road over the railway line for the creation of a bus lane and three new accesses onto Beaconsfield Road. Two bridges over the Grand Union Canal and Yeading Brook to provide pedestrian and cycle access to the Minet Country Park and Springfield Road. 54814/APP/2009/430; to allow for the widening of the road to facilitate the addition of bicycle lane.	there were considered to be a number of slight and one moderate adverse impact. 2.2 A number of measures to mitigate the adverse air quality impacts were recommended as part of the air quality chapter. It was concluded that the adoption of these measures would help ensure that the residual operational impacts would become not significant.	have moderate or substantial adverse impacts at a number of the existing roadside receptors, in both of the emissions reduction scenarios in the interim assessment year and that the proposed development will have moderate adverse impacts at a number of the existing roadside receptors in the completion year. Whereas the impacts of the Southall Gasworks air quality mitigation measures cannot easily be quantified, it is required, that the listed transport mitigation measures, will be secured through S106 Obligations, with the view of reducing the proposed development effects and improve air quality conditions in the area. Adoption of the measures outlined in paragraph 15.150 of the air quality chapter will help ensure that the residual operational impacts become less significant	
Planning Ref	**71487/APP/2017/736**		
WORLD BUSINESS CENTRE 4 NEWALL ROAD HEATHROW AIRPORT Details pursuant to Condition	No development shall commence until a low emission strategy has been submitted to and approved in writing by the	The information submitted to date is not suffice to discharge the condition. However the applicant has	Not discharged yet – under evaluation

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
8 (Low Emission Strategy) of outline planning permission Ref. 71487/APP/2015/4718 dated 23/05/2016 (Erection of a four storey office building (Use Class B1) with basement parking and roof top plant.	Local Planning Authority. The low emission strategy shall address 1) the specification of the CHP/ Gas boiler as low NOx emissions; and 2) show what benefits are given to office space users that own a Euro 5 or above or have implemented retrofitting devices that will enable compliance with such Euro standards. The strategy shall detail the steps that will be followed in addressing the lower emissions requirements stated above. The measures in the agreed scheme shall be maintained throughout the life of the development. The Low emissions strategy shall make reference to The London Councils 'Air Quality and Planning Guidance'; DEFRA Practice Guidance 3: Practice guidance on Measures to Encourage the Uptake of Low Emission Vehicles, February 2009; and Low Emission Strategies: Using the Planning System to Reduce Transport Emissions, Good Practice Guidance prepared by the Beacons Low Emission Strategies, June 2008. REASON As the application site is within an Air Quality Management Area and to comply with paragraph 124 of the NPPF and policy 7.14 of the London Plan (March 2015)	consulted with the LA and additional information is being analysed.	
Planning Ref	**18505/APP/2016/3534**		

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
BROOK ARMS PH HAREFIELD ROAD UXBRIDGE Demolition of the existing public house and erection of a new building comprising 18 residential units and a basement car park.	There is no energy centre or Combined Heat and Power (CHP) plant associated with the re-development of The Abrook Arms. The assessment makes reference to DMRB which is irrelevant and should not be used to assess planning applications (see comment above about its unsuitability to determine impacts for local air quality management purposes especially in areas already above the limit value or AQMAs) For the proposed new residential use the transport emissions are above the benchmark and therefore is not neutral.	Given that the development is not neutral in terms of pollutant emissions mitigation is required and secured through a S106 agreement calculated using total emissions of NOx.	A section 106 was required.
Planning Ref	**2734/APP/2016/4592**		
SITE OF FORMER BLUE ANCHOR PH PRINTING HOUSE LANE HAYES Redevelopment of vacant site to provide a part 2, part 3 and part 4 storey building comprising 1,444 sq.m B1 office floorspace, associated parking together with hard and soft landscaping.	The proposed development falls within the Hays Focus Area. The additional traffic generated by the proposed development will affect air quality at existing properties along the local road network. Increases in pollutant concentrations at sensitive locations resulting from emissions from these additional traffic movements will have negligible impacts for nitrogen dioxide. Concentrations will remain below the air quality objectives at the nearest receptors.	Since the proposed development is within a Focus area and no predictions were offered for the new receptors a condition is required to have mechanical ventilation with suitable NOx filters with a removal efficiency above 95%. This is to be secured via a condition.	**Condition for Mechanical Ventilation with suitable NOx filters** Prior to the commencement of development an estimation of new exposure levels shall be submitted to the Local Authority. In the instance the levels the new occupants are above or equal to 36ug/m3 details of a suitable a mechanical ventilation system will be first submitted to and approved by the Local Planning Authority, and implemented at these locations with suitable NOx filters with and efficiency equal or above 95%. Reason: To protect the human health of the new residents of the proposed development **Non-Road Mobile Machinery (NRMM) Condition** No works shall commence on the site until all plant and

Name, Location & Proposal description	Air Quality Issues in AQ Assessment	LA Requirements	Status/Outcome/ Planning Conditions Text
	The proposed development has also been shown to meet the London Plan's requirement that new developments are at least 'air quality neutral'. However no predicted concentrations were offered for the new receptors which will be brought to an area exceeding the NO2 Annual Mean Value at certain locations.		machinery to be used at the demolition and construction phases have been submitted to, and approved in writing by, the Local Planning Authority. Evidence is required to meet Stage IIIA of EU Directive 97/68/ EC for both NOx and PM. No works shall be carried out on site until all Non-Road Mobile Machinery (NRMM) and plant to be used on the site of net power between 37kW and 560 kW has been registered at http://nrmm.london/. Proof of registration must be submitted to the Local Planning Authority prior to the commencement of any works on site. Reason: To protect local air quality and comply with Policy 7.14 of the London Plan and the GLA NRMM LEZ. An inventory of all NRMM must be kept on site during the course of the demolitions, site preparation and construction phases. All machinery should be regularly serviced and service logs kept on site for inspection. Records should be kept on site which details proof of emission limits for all equipment. This documentation should be made available to local authority officers as required until development completion. Reason: To protect local air quality and comply with Policy 7.14 of the London Plan and the GLA NRMM LEZ

7 Challenges for air quality in Hillingdon

The difficulty of attaining the required air quality objectives is recognised throughout the UK, with AQMAs declared by most Local Authorities. The location of Hillingdon at the edge of London, the major roads that cross the Borough and Heathrow Airport combine to make the problems faced in the Borough acute.

The Council has identified and responded to a number of new challenges for air quality in the Borough in the past year, in particular:

- Heathrow development;
- Development of the M4 as a 'Smart Motorway'; and
- The construction of HS2.

All of these developments will affect the Focus Areas in the Borough. The Council is proactively working to manage associated impacts, though clearly requires strong cooperation from external bodies such as Highways England and TfL and companies such as the operators of Heathrow Airport. These organisations have their own additional objectives to meet, whether it be reducing congestion or making a profit for shareholders. However, recognition of the severity of air quality problems in the Borough is needed to ensure that public health is properly protected.

Appendix A Details of Monitoring Site QA/QC

A.1 Automatic Monitoring Sites

Automatic monitors within Hillingdon are operated as part of the Borough monitoring network, the Heathrow Airport monitoring network and Defra's AURN. Data have been provided and ratified by Ricardo-AEA following the national procedure guidance and standards.

All TEOM data have been converted to gravimetric equivalent using the VCM method and BAM data have been corrected by applying a factor of 0.8333. All data are reported at ambient temperature and pressure.

A.2 Diffusion Tube Quality Assurance / Quality Control

Hillingdon uses Gradko International for their diffusion tube analysis. These are prepared using the 50% TEA in acetone method. The bias adjustment factor for Gradko in 2016, obtained from the national bias adjustment spreadsheet (based on 16 studies) is 1.03.

Whilst co-location studies have been carried out within Hillingdon, it was not possible to calculate a local bias adjustment factor due to the low data capture observed at this location during 2016. As such, the bias adjustment factor for 2016 derived from the national bias adjustment spreadsheet has been used. The use of a national bias adjustment factor is in line with the approach taken in recent progress reports published by Hillingdon, ensuring a consistency in reported results.

A.3 Adjustments to the Ratified Monitoring Data

Where data capture is less than 75% of a full calendar year (less than 9 months), the means have been "annualised" using the methodology outlined in LLAQM.TG(16) before being compared to annual mean objectives. Data adjustment factors are shown in the following tables.

Table M1. Short-Term to Long-Term Monitoring Data Adjustment – Site HD31

Site	Site Type	Annual Mean ($\mu g/m^3$)	Period Mean ($\mu g/m^3$)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	63.6	0.9
Harrow - Stanmore	UB	26.4	35.7	0.7
Enfield - Prince of Wales School	UB	24.9	33.4	0.7
Windsor and Maidenhead	UB	18.2	24.4	0.7
Haringey - Priory Park South	UB	25.0	31.7	0.8
Hillingdon Sipson	UB	36.0	44.9	0.8
Average				**0.8**

Table M2. Short-Term to Long-Term Monitoring Data Adjustment – Site HD58

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	53.4	1.1
Harrow - Stanmore	UB	26.4	21.2	1.2
Enfield - Prince of Wales School	UB	24.9	22.6	1.1
Windsor and Maidenhead	UB	18.2	15.8	1.2
Haringey - Priory Park South	UB	25.0	22.2	1.1
Hillingdon Sipson	UB	36.0	31.8	1.1
Average				**1.1**

Table M3. Short-Term to Long-Term Monitoring Data Adjustment – Site HD60

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	64.3	0.9
Harrow - Stanmore	UB	26.4	31.5	0.8
Enfield - Prince of Wales School	UB	24.9	30.2	0.8
Windsor and Maidenhead	UB	18.2	21.2	0.9
Haringey - Priory Park South	UB	25.0	28.7	0.9
Hillingdon Sipson	UB	36.0	39.7	0.9
Average				**0.9**

Table M4. Short-Term to Long-Term Monitoring Data Adjustment – Site HD73

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	49.3	1.2
Harrow - Stanmore	UB	26.4	18.8	1.4
Enfield - Prince of Wales School	UB	24.9	19.5	1.3
Windsor and Maidenhead	UB	18.2	13.5	1.3
Haringey - Priory Park South	UB	25.0	19.6	1.3
Hillingdon Sipson	UB	36.0	28.9	1.2
Average				**1.3**

Table M5. Short-Term to Long-Term Monitoring Data Adjustment – Site HD203

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	59.1	1.0
Harrow - Stanmore	UB	26.4	30.7	0.9
Enfield - Prince of Wales School	UB	24.9	28.3	0.9
Windsor and Maidenhead	UB	18.2	21.2	0.9
Haringey - Priory Park South	UB	25.0	28.1	0.9
Hillingdon Sipson	UB	36.0	41.4	0.9
Average				**0.9**

Table M6. Short-Term to Long-Term Monitoring Data Adjustment – Site HD207

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	57.6	1.0
Harrow - Stanmore	UB	26.4	28.6	0.9
Enfield - Prince of Wales School	UB	24.9	26.2	1.0
Windsor and Maidenhead	UB	18.2	19.7	0.9
Haringey - Priory Park South	UB	25.0	26.4	1.0
Hillingdon Sipson	UB	36.0	39.5	0.9
Average				**1.0**

Table M7. Short-Term to Long-Term Monitoring Data Adjustment – Site HD208

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	47.3	1.2
Harrow - Stanmore	UB	26.4	20.4	1.3
Enfield - Prince of Wales School	UB	24.9	16.9	1.5
Windsor and Maidenhead	UB	18.2	13.9	1.3
Haringey - Priory Park South	UB	25.0	19.2	1.3
Hillingdon Sipson	UB	36.0	29.0	1.2
Average				**1.3**

Table M8. Short-Term to Long-Term Monitoring Data Adjustment – Site HD209

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	59.1	1.0
Harrow - Stanmore	UB	26.4	30.7	0.9
Enfield - Prince of Wales School	UB	24.9	28.3	0.9
Windsor and Maidenhead	UB	18.2	21.2	0.9
Haringey - Priory Park South	UB	25.0	28.1	0.9
Hillingdon Sipson	UB	36.0	41.4	0.9
Average				**0.9**

Table M9. Short-Term to Long-Term Monitoring Data Adjustment – Site HD402

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Kensington and Chelsea - Cromwell Road	UB	57.1	59.1	1.0
Harrow - Stanmore	UB	26.4	30.7	0.9
Enfield - Prince of Wales School	UB	24.9	28.3	0.9
Windsor and Maidenhead	UB	18.2	21.2	0.9
Haringey - Priory Park South	UB	25.0	28.1	0.9
Hillingdon Sipson	UB	36.0	41.4	0.9
Average				**0.9**

A.4 Distance Adjustment

Where an exceedance is measured at a monitoring site which is not representative of public exposure, it is recommended to use the procedure specified in LLAQM.TG(16) to estimate the concentration at the nearest receptor. This process was followed in this report and concentrations reported accordingly.

Appendix B Full Monthly Diffusion Tube Results for 2016

Table N. NO_2 Diffusion Tube Results - Hillingdon

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Annual Mean NO_2													
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – annualised data [c]	Annual mean annualised and bias adjusted [d]
HD31	83.3	83.3	39.2	34.9	34.9	29.7	29.7	29.7	36.5	21.3	77.7	39.2	nd	nd	36.6	37.7
HD31	66.7	66.7	34.3	missing	missing	37.8	37.8	37.8	41.0	19.4	79.4	34.3	nd	nd	31.7	32.6
HD31	66.7	66.7	36.6	missing	missing	36.6	36.6	36.6	40.9	20.5	78.0	36.6	nd	nd	31.5	32.5
HD43	75.0	75.0	30.1	45.5	45.5	43.7	43.7	43.7	37.6	25.3	missing	30.1	nd	nd	**41.5**	**42.8**
HD46	83.3	83.3	27.3	37.7	37.7	36.2	36.2	36.2	33.6	19.2	56.0	27.3	nd	nd	38.1	39.3
HD46	83.3	83.3	21.7	46.7	46.7	38.5	38.5	38.5	34.2	17.9	58.1	21.7	nd	nd	39.9	**41.1**
HD47	83.3	83.3	16.2	24.7	24.7	27.6	27.6	27.6	20.9	12.0	40.2	16.2	nd	nd	26.0	26.8
HD49	83.3	83.3	15.2	22.8	22.8	18.7	18.7	18.7	18.4	9.3	25.0	15.2	nd	nd	20.3	20.9
HD50B	83.3	83.3	26.5	32.3	32.3	28.1	28.1	28.1	30.7	18.3	50.7	26.5	nd	nd	31.4	32.3
HD51	83.3	83.3	23.1	25.7	25.7	24.7	24.7	24.7	31.9	10.2	64.9	23.1	nd	nd	28.5	29.3
HD52	83.3	83.3	20.3	28.7	28.7	27.9	27.9	27.9	28.9	10.8	58.2	20.3	nd	nd	29.2	30.0
HD53	83.3	83.3	39.0	36.6	36.6	33.7	33.7	33.7	42.5	24.4	53.5	39.0	nd	nd	37.9	39.0
HD55	83.3	83.3	26.5	35.5	35.5	28.1	28.1	28.1	34.8	18.0	49.0	26.5	nd	nd	33.7	34.7
HD56	75.0	75.0	25.0	36.0	36.0	25.3	25.3	25.3	missing	14.5	43.5	25.0	nd	nd	31.2	32.1
HD57	83.3	83.3	26.2	35.2	35.2	29.8	29.8	29.8	33.1	19.6	50.3	26.2	nd	nd	34.4	35.5
HD58	58.3	58.3	2.5	missing	missing	31.6	31.6	31.6	missing	21.8	56.8	2.5	nd	nd	33.2	34.2
HD59	83.3	83.3	20.0	32.7	32.7	26.0	26.0	26.0	24.0	14.0	47.6	20.0	nd	nd	29.4	30.3
HD60	58.3	58.3	missing	missing	missing	24.5	24.5	24.5	21.2	10.0	37.8	missing	nd	nd	23.5	24.2
HD61	83.3	83.3	20.4	34.3	34.3	27.2	27.2	27.2	28.1	17.5	47.0	20.4	nd	nd	31.0	31.9
HD65	83.3	83.3	20.7	27.2	27.2	20.9	20.9	20.9	24.9	14.3	40.7	20.7	nd	nd	26.0	26.7
HD67	83.3	83.3	17.5	24.5	24.5	26.1	26.1	26.1	23.3	8.4	50.3	17.5	nd	nd	25.0	25.8
HD70	83.3	83.3	12.8	20.5	20.5	16.7	16.7	16.7	14.7	7.8	29.7	12.8	nd	nd	18.6	19.1
HD73	50.0	50.0	16.9	missing	missing	19.7	19.7	19.7	missing	missing	39.0	16.9	nd	nd	31.8	32.8
HD74	83.3	83.3	13.2	25.6	25.6	22.1	22.1	22.1	17.4	9.4	35.5	13.2	nd	nd	23.3	24.0

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Annual Mean NO_2													
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – annualised data [c]	Annual mean annualised and bias adjusted [d]
HD75	83.3	83.3	18.5	21.7	21.7	19.8	19.8	19.8	21.5	13.1	38.0	18.5	nd	nd	22.1	22.8
HD200	83.3	83.3	23.2	35.7	35.7	12.1	12.1	12.1	32.0	20.9	51.8	23.2	nd	nd	28.5	29.4
HD202	83.3	83.3	21.1	24.2	24.2	22.1	22.1	22.1	24.2	13.6	38.6	21.1	nd	nd	25.4	26.1
HD203	58.3	58.3	32.7	37.7	37.7	missing	missing	missing	38.3	22.4	63.6	32.7	nd	nd	39.7	**40.9**
HD204	83.3	83.3	22.5	29.6	29.6	30.0	30.0	30.0	32.5	11.7	63.2	22.5	nd	nd	31.0	32.0
HD205	83.3	83.3	28.4	33.5	33.5	32.2	32.2	32.2	39.0	13.8	69.0	28.4	nd	nd	34.8	35.9
HD206	83.3	83.3	24.8	29.4	29.4	28.6	28.6	28.6	27.5	9.1	53.6	24.8	nd	nd	28.8	29.6
HD207	50.0	50.0	19.8	29.6	29.6	missing	missing	missing	26.1	8.9	missing	19.8	nd	nd	24.1	24.9
HD208	66.7	66.7	17.8	25.0	25.0	21.3	21.3	21.3	20.3	missing	36.6	17.8	nd	nd	28.0	28.9
HD209	58.3	58.3	26.7	34.2	34.2	missing	missing	missing	26.7	18.2	41.9	26.7	nd	nd	30.0	30.9
HD210	83.3	83.3	28.9	42.5	42.5	40.3	40.3	40.3	35.8	21.9	56.3	28.9	nd	nd	**41.3**	**42.5**
HD211	83.3	83.3	19.6	35.2	35.2	36.1	36.1	36.1	27.3	15.2	47.3	19.6	nd	nd	33.8	34.8
HD212	83.3	83.3	23.9	39.9	39.9	31.4	31.4	31.4	25.6	17.7	50.1	23.9	nd	nd	34.4	35.5
HD213	83.3	83.3	31.7	38.0	38.0	28.0	28.0	28.0	33.6	20.6	59.8	31.7	nd	nd	36.3	37.4
HD214	83.3	83.3	40.5	38.5	38.5	34.4	34.4	34.4	43.3	24.1	65.6	40.5	nd	nd	**40.9**	**42.1**
HD302	75.0	75.0	22.6	33.5	33.5	25.5	25.5	25.5	missing	13.1	43.6	22.6	nd	nd	29.9	30.8
HD401	83.3	83.3	18.8	28.7	28.7	25.6	25.6	25.6	21.3	11.7	39.1	18.8	nd	nd	26.8	27.6
HD402	66.7	66.7	23.0	missing	missing	31.2	31.2	31.2	28.9	16.6	52.4	23.0	nd	nd	31.3	32.3

Exceedance of the NO_2 annual mean AQO of 40 μgm^{-3} are shown in **bold**.

[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means were "annualised" in accordance with LLAQM Technical Guidance, where valid data capture was less than 75%.

d National bias adjustment of 1.03 was applied to the data

nd = no data

Table O. NO_2 Diffusion Tube Results – Green Lane – Northwood's Voice Local Group

Site ID	Valid data capture for monitoring period % [a]	Valid data capture 2016 % [b]	Annual Mean NO_2													
			Jan	Feb	March	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual mean – raw data [c]	Annual mean bias adjusted [d]	Annual mean bias adjusted Relevant Exposure
Hard 8	*100*	*100*	*39.9*	*40.6*	*35.5*	*34.6*	*40.5*	*33.3*	*28.7*	*36.0*	*42.2*	*43.5*	*48.7*	*48.9*	*39.4*	***40.6***	*39.4*
Steve's shop	*100*	*100*	*35.9*	*31.7*	*29.6*	*31.4*	*25.6*	*30.7*	*27.9*	*35.7*	*36.6*	*37.1*	*45.4*	*48.1*	*34.6*	*35.7*	*34.4*

Exceedance of the NO_2 annual mean AQO of 40 μgm^{-3} are shown in **bold**.

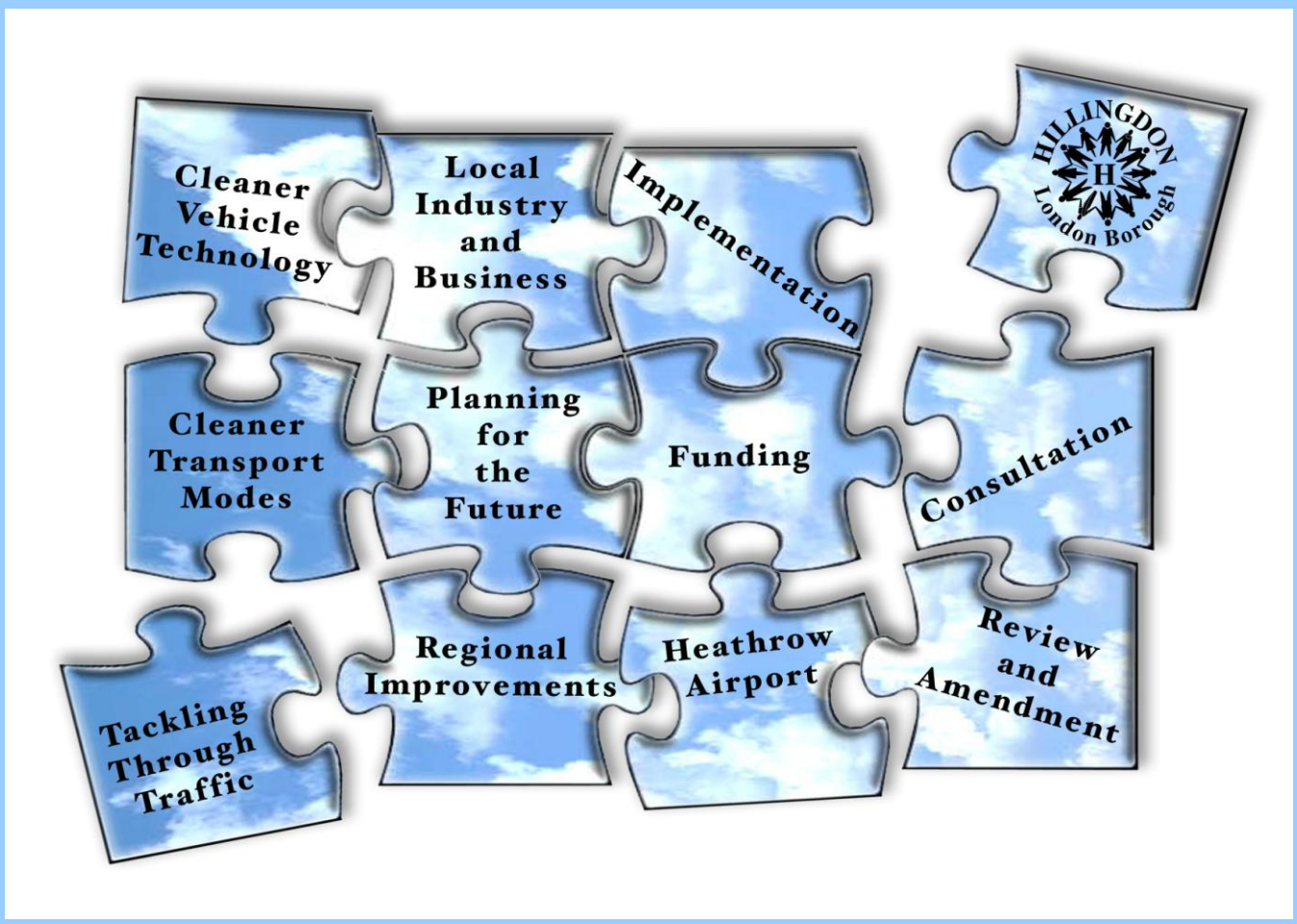
[a] data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

[b] data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

[c] Means were "annualised" in accordance with LLAQM Technical Guidance, where valid data capture was less than 75%.

d National bias adjustment of 1.03 was applied to the data

nd = no data


Cleaner Vehicle Technology
Local Industry and Business
Implementation
HILLINGDON
H
London Borough
Cleaner Transport Modes
Planning for the Future
Funding
Consultation
Tackling Through Traffic
Regional Improvements
Heathrow Airport
Review and Amendment